



# SERVICE MANUAL

DUAL BAND FM TRANSCEIVER

## IC-2340H

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## INTRODUCTION

This service manual describes the latest information for the **IC-2340H DUAL BAND FM TRANSCEIVER** at the time of publication.

MODEL	VERSION NO.	VERSION	SYMBOL
IC-3230H	#22	Europe	EUR
	#23	Italy	ITA
	#25	U.S.A.	USA
	#26	Korea	KOR
	#27	Australia	AUS
	#28	Asia	SEA

## DANGER

**NEVER** connect the transceiver to an AC outlet or to a DC power supply that uses more than 16 V. This will ruin the transceiver.

**DO NOT** expose the transceiver to rain, snow or any liquids.

**DO NOT** reverse the polarities of the DC power supply when connecting the transceiver.

**DO NOT** apply an RF signal of more than 20 dBm (100 mW) to the antenna connector. This could damage the transceiver's front end.



## ORDERING PARTS

Be sure to include the following four points when ordering replacement parts:

1. 10-digit order numbers
2. Component part number and name
3. Equipment model name and unit name
4. Quantity required

### <SAMPLE ORDER>

1130003760	IC	TC4S81F	IC2340H	MAIN-A UNIT	1 piece
8810006230	Screw	OH M2.6 x 4	IC2340H	Top cover	6 pieces

Addresses are provided on the inside back cover for your convenience.

## REPAIR NOTES

1. Make sure a problem is internal before disassembling the transceiver.
2. **DO NOT** open the transceiver until the transceiver is disconnected from its power source.
3. **DO NOT** force any of the variable components. Turn them slowly and smoothly.
4. **DO NOT** short any circuits or electronic parts. An insulated tuning tool **MUST** be used for all adjustments.
5. **DO NOT** keep power ON for a long time when the transceiver is defective.
6. **DO NOT** transmit power into a signal generator or a sweep generator.
7. **ALWAYS** connect a 40 dB to 50 dB attenuator between the transceiver and a deviation meter or spectrum analyser when using such test equipment.
8. **READ** the instructions of test equipment thoroughly before connecting equipment to the transceiver.

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To upgrade quality, all electrical or mechanical parts and internal circuits are subject to change without notice or obligation.

# SECTION 1 SPECIFICATIONS

## ■ GENERAL

- Frequency coverage

Version	Frequency coverage (MHz)	
	VHF	UHF
U.S.A.	144.00 – 148.00	440.00 – 450.00
Europe	144.00 – 146.00	430.00 – 440.00
Asia	144.00 – 148.00 (RX: 136.00 – 174.00 <sup>*1</sup> )	430.00 – 440.00
Australia	144.00 – 148.00	430.00 – 440.00
Italy	144.00 – 148.00 (RX: 136.00 – 174.00 <sup>*1</sup> )	430.00 – 440.00 (RX: 400.00 – 479.00 <sup>*2</sup> )

<sup>\*1</sup>Guaranteed 144.00 – 148.00 MHz, <sup>\*2</sup>Guaranteed 430.00 – 440.00 MHz

- Mode
- Tuning step increments
- Number of memory channels

: FM (F3)  
: 5, 10, 12.5, 15, 20, 25, 30 or 50 kHz

	VHF (ch)	UHF (ch)
Memory channels	50	50
Call channels	1	1
Scan edge channels	2	2

- Antenna impedance
- Power supply requirement
- Frequency stability
- Usable temperature range
- Dimensions

: 50  $\Omega$  nominal  
: 13.8 V DC  $\pm$ 15 % (negative ground)  
:  $\pm$ 10 ppm ( $-10^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$ ;  $+14^{\circ}\text{F}$  to  $+140^{\circ}\text{F}$ )  
:  $-10^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$  ( $+14^{\circ}\text{F}$  to  $+140^{\circ}\text{F}$ )  
: 140 (W) x 40 (H) x 165 (D) mm; 5.5 (W) x 1.6 (H) x 6.5 (D) in  
(Projections not included)

- Weight

: 1.3 kg (2.9 lb)

## ■ TRANSMITTER

- Modulation system
- Max. frequency deviation
- Spurious emissions
- Microphone impedance
- Output power and current drain  
(at 13.8 V DC)

: Variable reactance frequency modulation  
:  $\pm$ 5.0 kHz  
: Less than  $-60$  dB  
: 600  $\Omega$

		POWER	CURRENT
VHF	High	45 W	10.5 A
	Low-2	10 W	5.5 A
	Low-1	5 W	4.0 A
UHF	High	35 W	10.5 A
	Low-2	10 W	6.0 A
	Low-1	5 W	4.5 A

## ■ RECEIVER

- Receive system
- Intermediate frequencies
- Sensitivity
- Squelch threshold sensitivity
- Selectivity
- Spurious rejection ratio
- Audio output power
- Current drain
- Audio output impedance

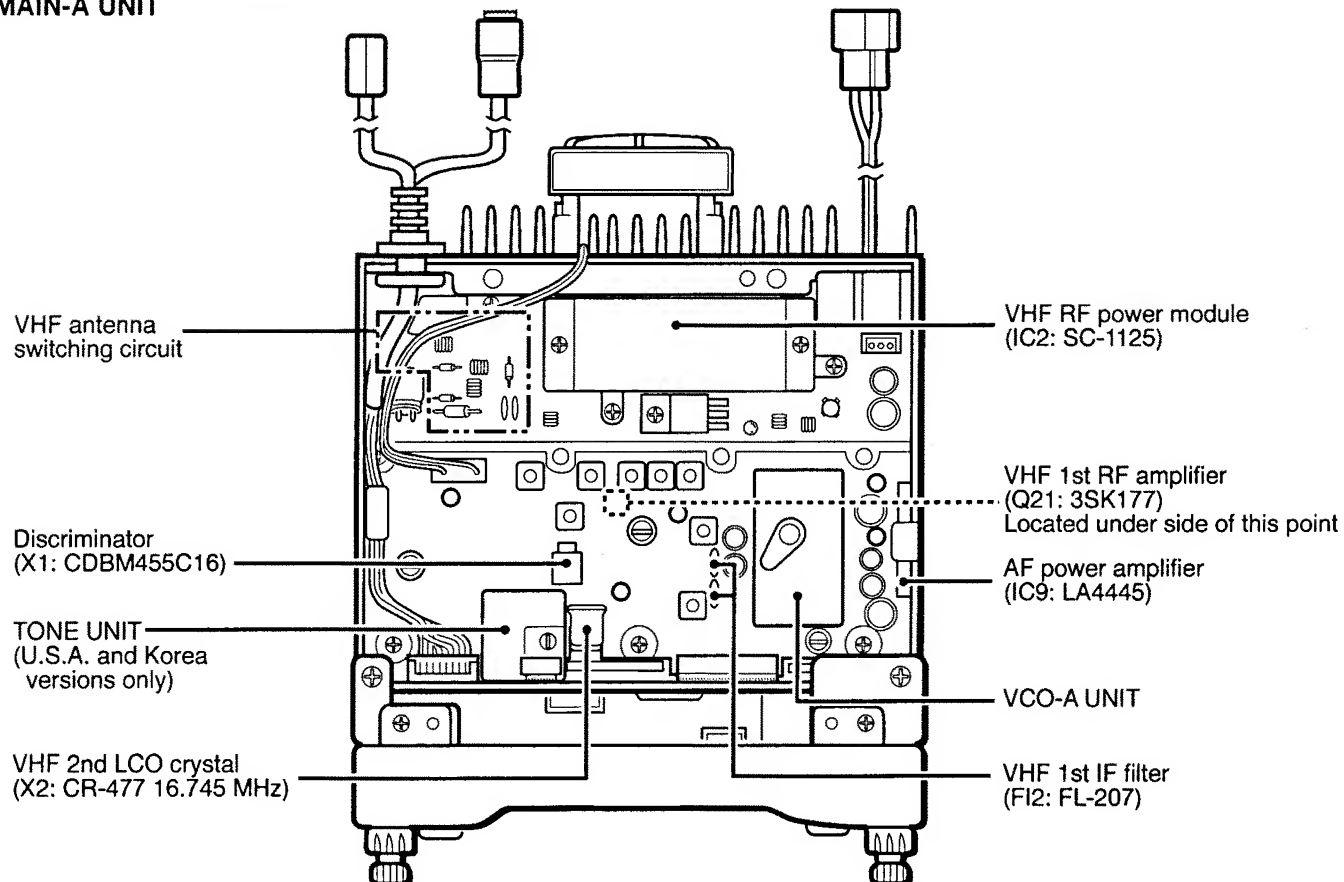
: Double-conversion superheterodyne  
: 1st 17.2 MHz (VHF)  
30.85 MHz (UHF)  
2nd 455 kHz  
: Less than 0.16  $\mu\text{V}$  for 12 dB SINAD  
: Less than 0.13  $\mu\text{V}$   
: More than 15 kHz/ $-6$  dB  
: Less than 30 kHz/ $-60$  dB  
: More than 60 dB  
: More than 2.4 W at 10 % distortion with an 8  $\Omega$  load  
: Max. audio 1.8 A  
Stand-by 1.2 A  
: 4 to 8  $\Omega$

All stated specifications are subject to change without notice or obligation.

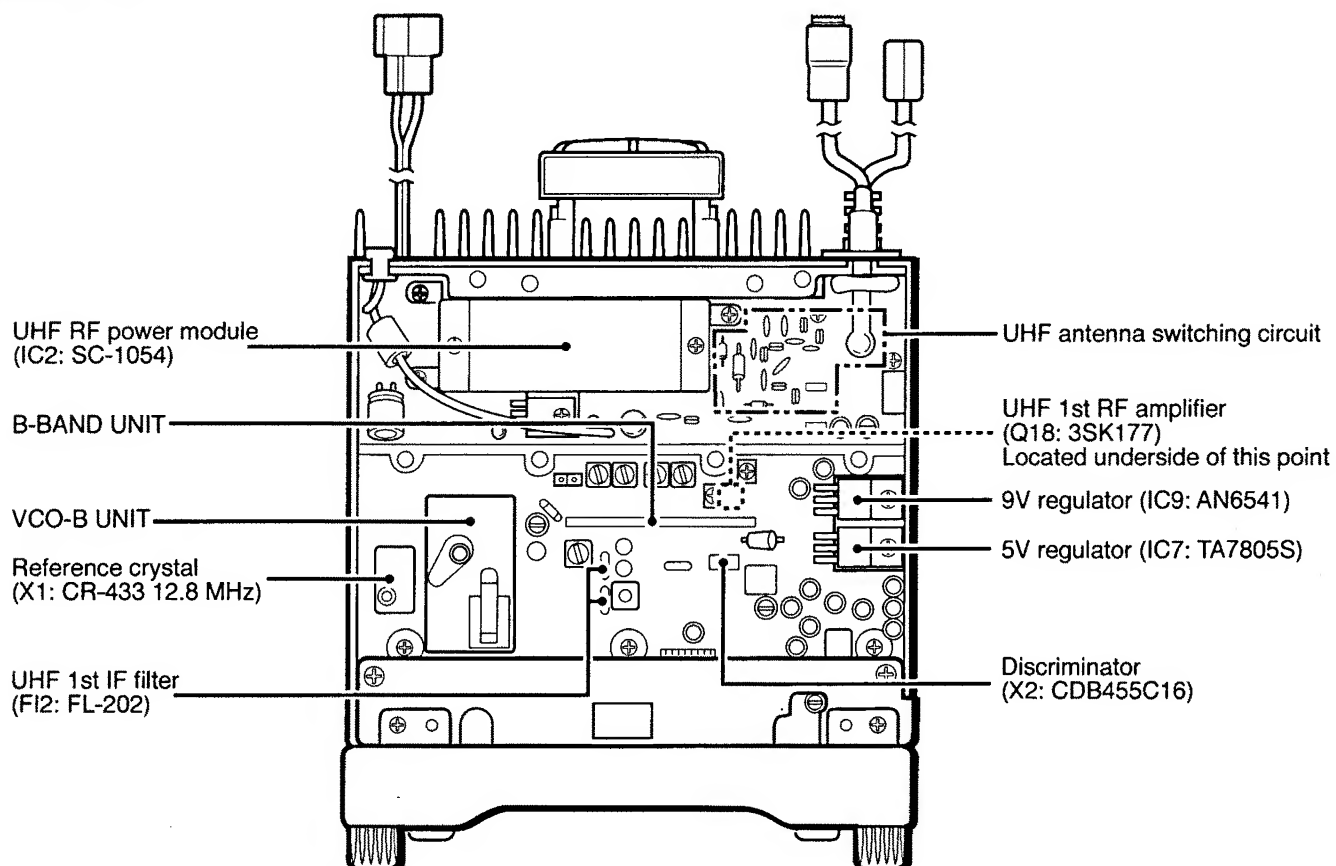


## SECTION 2 INSIDE VIEWS

### • MAIN-A UNIT



### • MAIN-B UNIT



## SECTION 3 DISASSEMBLY INSTRUCTIONS

### ● REMOVE THE COVERS (Fig. 3-1)

Remove 12 screws, (a) (black, 4 mm) to take off top and bottom covers. Disconnect the speaker connector (J4) to remove the top cover.

### ● REMOVE THE FRONT PANEL (Fig. 3-1)

Remove 4 screws, (b) (flat head, 4 mm), disconnect the connectors (J1/J6, J2/J7), and remove the front panel in the direction of the arrow.

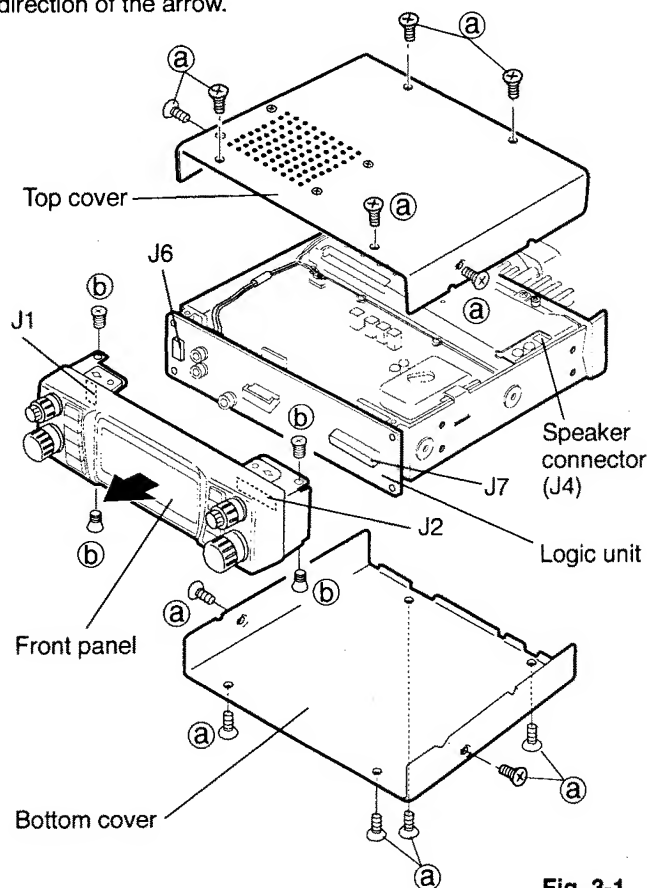


Fig. 3-1

### ● REMOVE THE LOGIC UNIT (Fig. 3-2)

Remove 4 screws, (c) (pan head, 5 mm), then disconnect J1/J3, J2/J2, J5/"the microphone connector" to separate the LOGIC unit from the chassis.

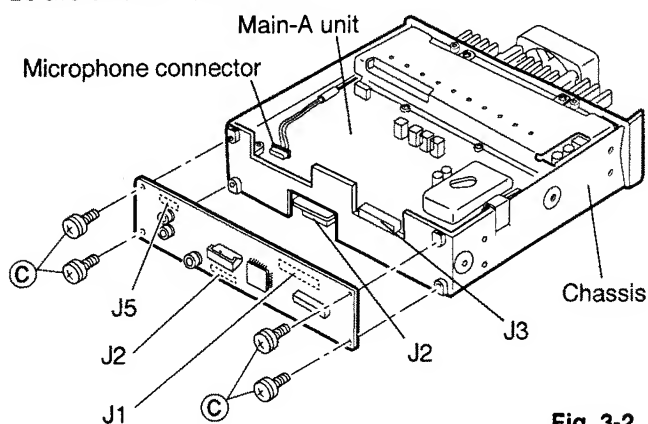


Fig. 3-2

### ● REMOVE THE MAIN-B UNIT (Fig. 3-3)

- ① Remove 4 screws (d) and 2 screws (e), then remove the shield cover.
- ② Remove screws 3 x (f), 2 x (g) and 1 x (h), then remove the module cover.
- ③ Unsolder the 3 points (incl. 8-pins), then remove screws 5 x (i) and 2 x (j) to lift up the MAIN-B unit.

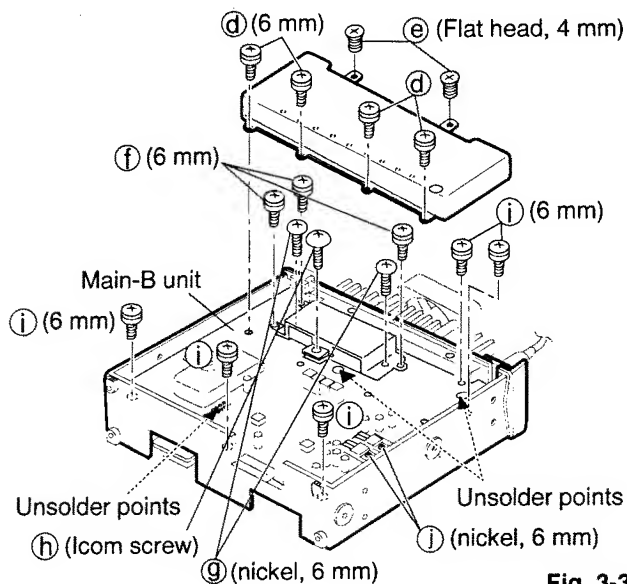


Fig. 3-3

### ● REMOVE THE MAIN-A UNIT (Fig. 3-4)

- ① Be sure unsolder on the MAIN-B unit. (Step ③ above)
- ② Remove 4 screws, (k) and 2 screws (m), then remove the shield cover.
- ③ Remove screws 2 x (n), 2 x (o) and 1 x (p), then remove the module cover.
- ④ Remove 5 screws (q) and 1 clip, to lift up the MAIN-A unit.

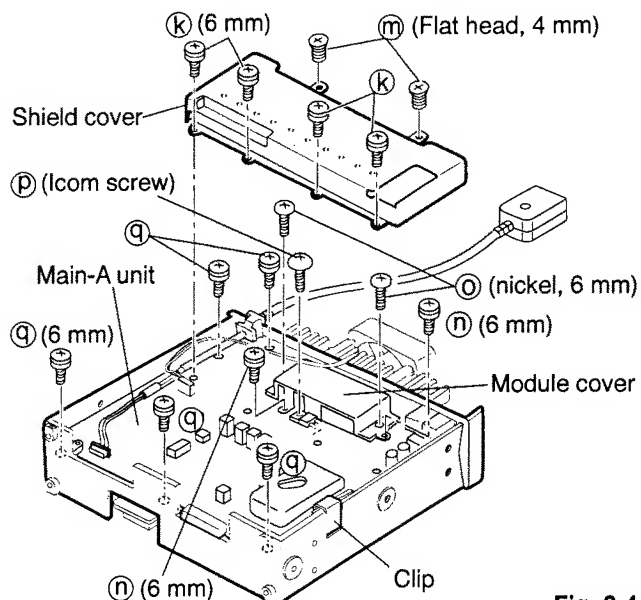


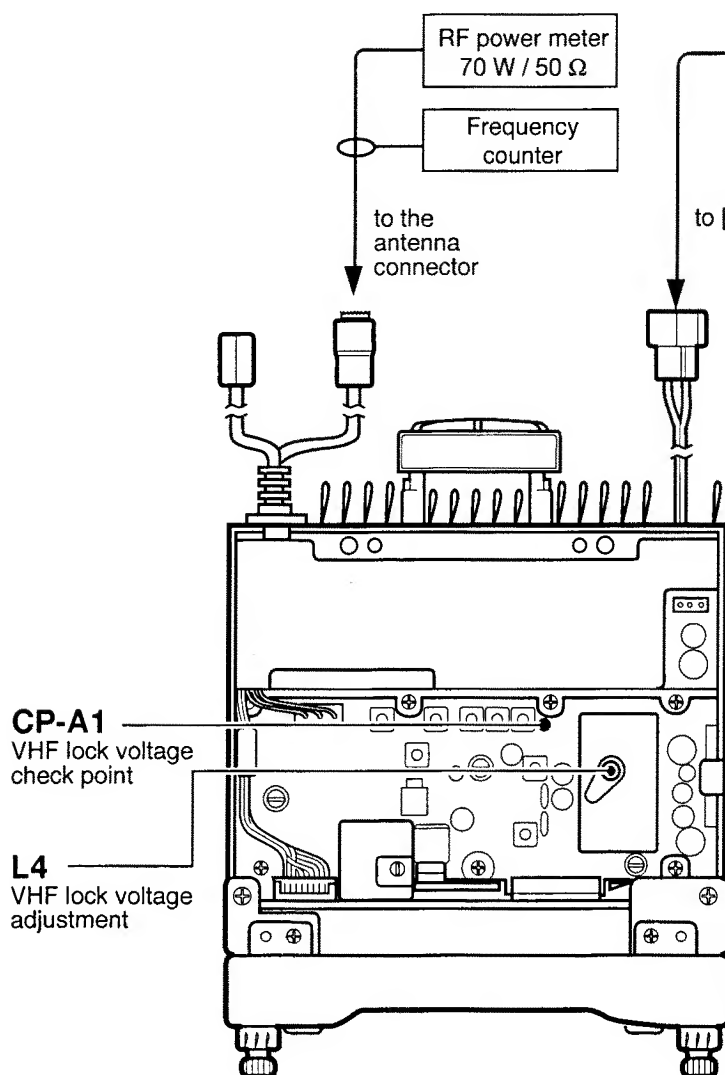
Fig. 3-4

## SECTION 4 ADJUSTMENT PROCEDURES

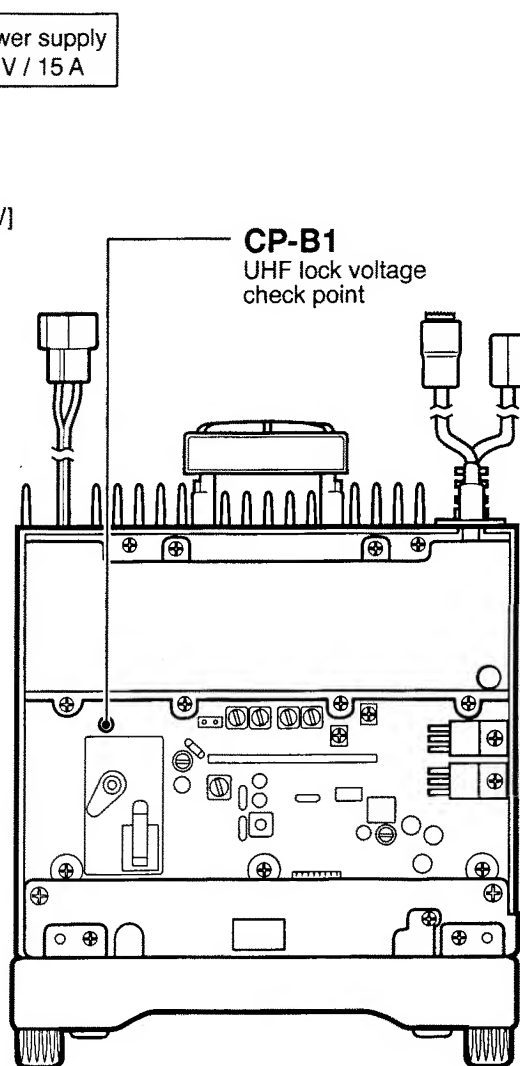
### 4-1 PLL ADJUSTMENT

ADJUSTMENT		ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT POINT	
			UNIT	LOCATION		UNIT	ADJUST
REFERENCE FREQUENCY	1	<ul style="list-style-type: none"> <li>• UHF display: 440.000 MHz</li> <li>• Connect the RF power meter or a 50 <math>\Omega</math> dummy load to the antenna connector.</li> <li>• Simplex</li> <li>• Transmitting</li> </ul>	Rear panel	Loosely couple the frequency counter to the antenna connector.	440.000 MHz $\pm 250$ Hz	MAIN-B	Verify
VHF LOCK VOLTAGE	1	<ul style="list-style-type: none"> <li>• VHF display: 145.000 MHz</li> <li>• Receiving</li> </ul>	MAIN-A	Connect the DC voltmeter to CP-A1.	7.5 V	MAIN-A (VCO-A)	L4
UHF LOCK VOLTAGE	1	<ul style="list-style-type: none"> <li>• UHF display: 445.000 MHz (USA version) 435.075 MHz (All other versions)</li> <li>• Receiving</li> </ul>	MAIN-B	Connect the DC voltmeter to CP-B1.	10 V (USA version) 9 V (All other versions)	MAIN-B	Verify

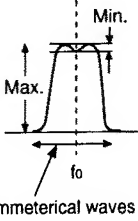
#### • MAIN-A UNIT



#### • MAIN-B UNIT

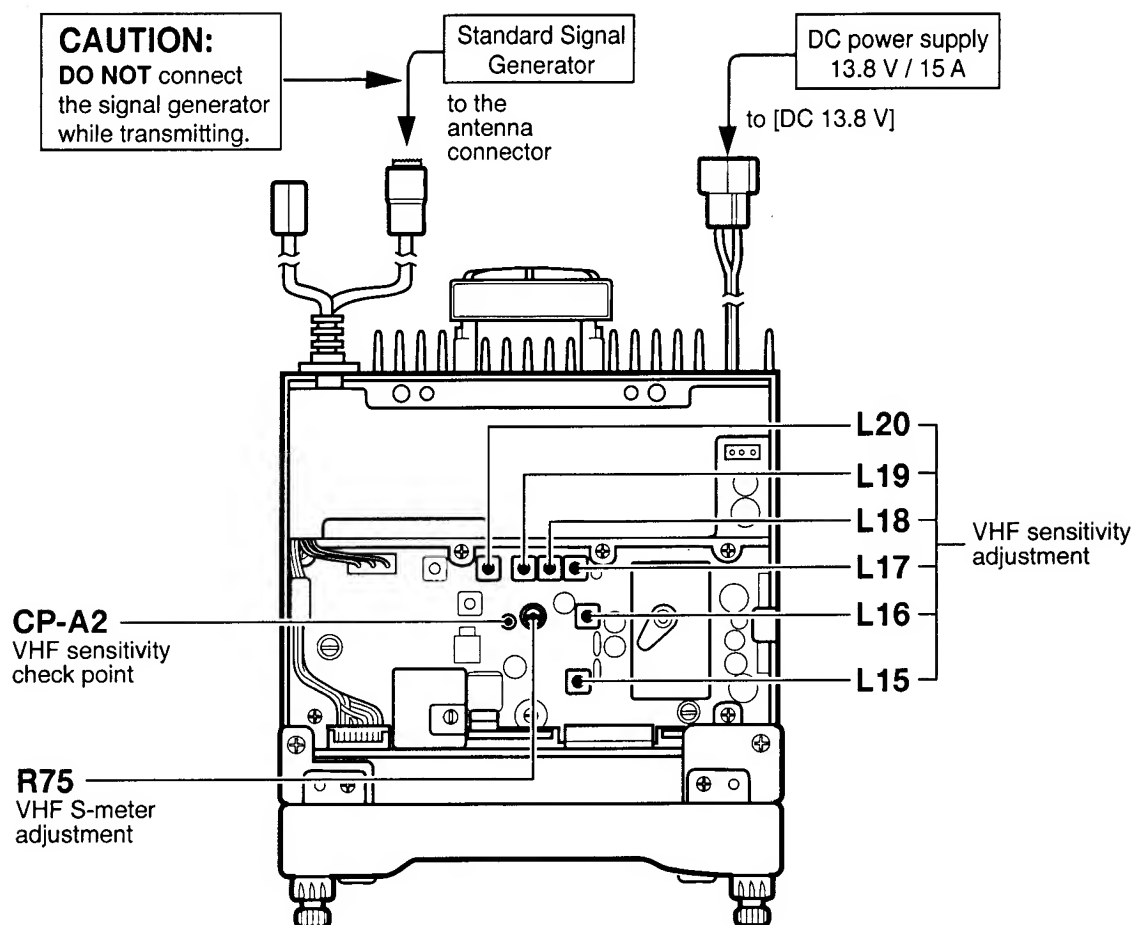


## 4-2 RECEIVER ADJUSTMENT

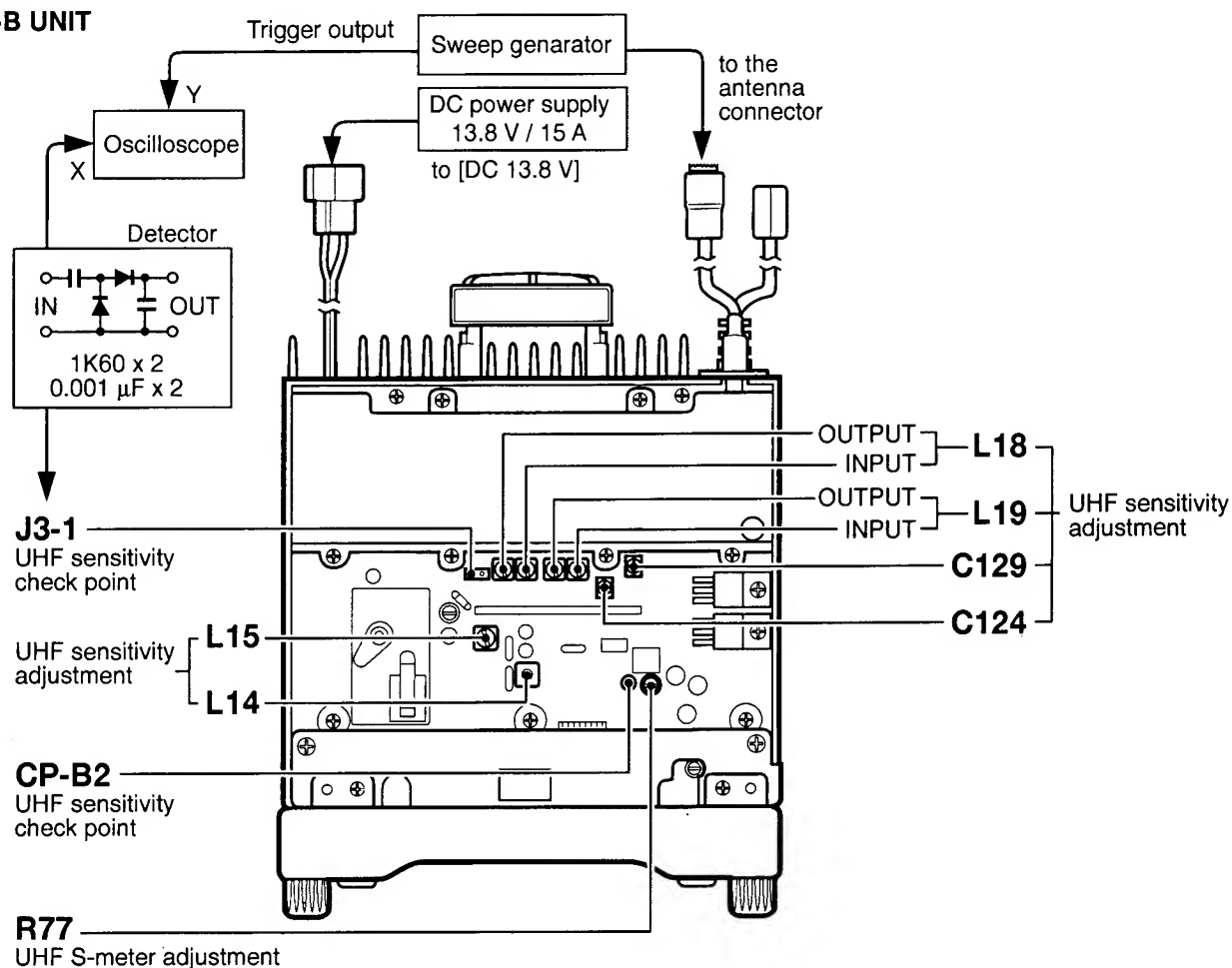
ADJUSTMENT		ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT POINT	
			UNIT	LOCATION		UNIT	ADJUST
VHF SENSITIVITY	1	<ul style="list-style-type: none"><li>● VHF display: 146.000 MHz (USA, SEA versions) 145.000 MHz (All other versions)</li><li>● Connect the SSG to the antenna connector and set as: Level : 1.0 <math>\mu</math>V* (-107 dBm) Modulation : 1 kHz Deviation : <math>\pm</math>3.5 kHz</li><li>● R75 (MAIN-A) : Max. CW</li><li>● Receiving</li></ul>	MAIN-A	Connect the DC voltmeter to CP-A2.	Maximum DC voltage	MAIN-A	Adjust in sequence L20, L19, L18, L17
	2	<ul style="list-style-type: none"><li>● VHF display: 146.000 MHz (USA, SEA versions) 145.000 MHz (All other versions)</li><li>● Set the SSG as: Deviation : <math>\pm</math>7.5 kHz</li></ul>					Adjust in sequence L16, L15
	NOTE: Adjust the standard signal generator output level so that the DC voltmeter needle remains at all times in the lowest 30 % of the full range.						
UHF SENSITIVITY	1	<ul style="list-style-type: none"><li>● UHF display: 445.000 MHz (USA version) 435.000 MHz (All other versions)</li><li>● Connect the sweep generator to the antenna connector and set as: Sweep level : 22 mV (-20 dBm) Center frequency: Same as the displayed frequency Sweep bandwidth: 10 MHz or 20 MHz</li><li>● Receiving</li></ul>	MAIN-B	Connect the oscilloscope to J3, pin 1 through the detector.	Adjust as follows: 	MAIN-B	C129, C124, L19, L18
	2	<ul style="list-style-type: none"><li>● Connect the SSG to the antenna connector and set as: Level : 1.0 <math>\mu</math>V* (-107 dBm) Modulation : 1 kHz Deviation : <math>\pm</math>7.5 kHz</li><li>● R77 (MAIN-B) : Max. CW</li></ul>		Connect the DC voltmeter to CP-B2.	Maximum		L15, L14
	NOTE: Adjust the standard signal generator output level so that the DC voltmeter needle remains at all times in the lowest 30 % of the full range.						
S-METER	1	<ul style="list-style-type: none"><li>● VHF display: 146.000 MHz (USA, SEA versions) 145.000 MHz (All other versions)</li><li>● Connect the SSG to the antenna connector and set as: Level : 1.0 <math>\mu</math>V* (-107 dBm) Modulation : 1 kHz Deviation : <math>\pm</math>3.5 kHz</li><li>● Receiving</li></ul>	Front Panel	LCD display [V DISPLAY]	S3 (4 dots)	MAIN-A	R75
	2	<ul style="list-style-type: none"><li>● UHF display: 445.000 MHz (USA version) 435.000 MHz (All other versions)</li></ul>		LCD display [U DISPLAY]	S3 (4 dots)		MAIN-B

\* This output level of the standard signal generator (SSG) is indicated as SSG's open circuit.

• MAIN-A UNIT



• MAIN-B UNIT

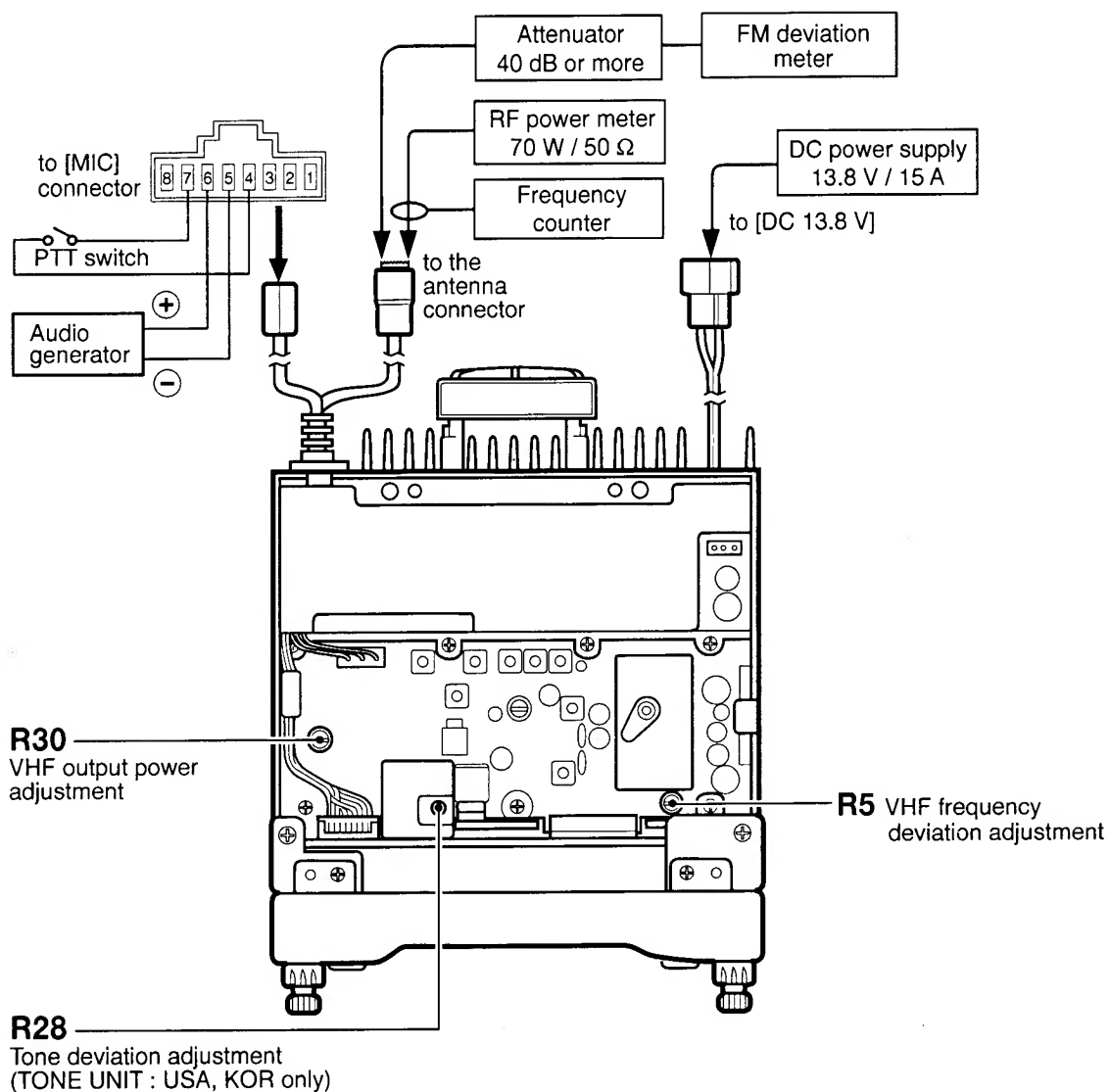


## 4-3 TRANSMITTER ADJUSTMENT

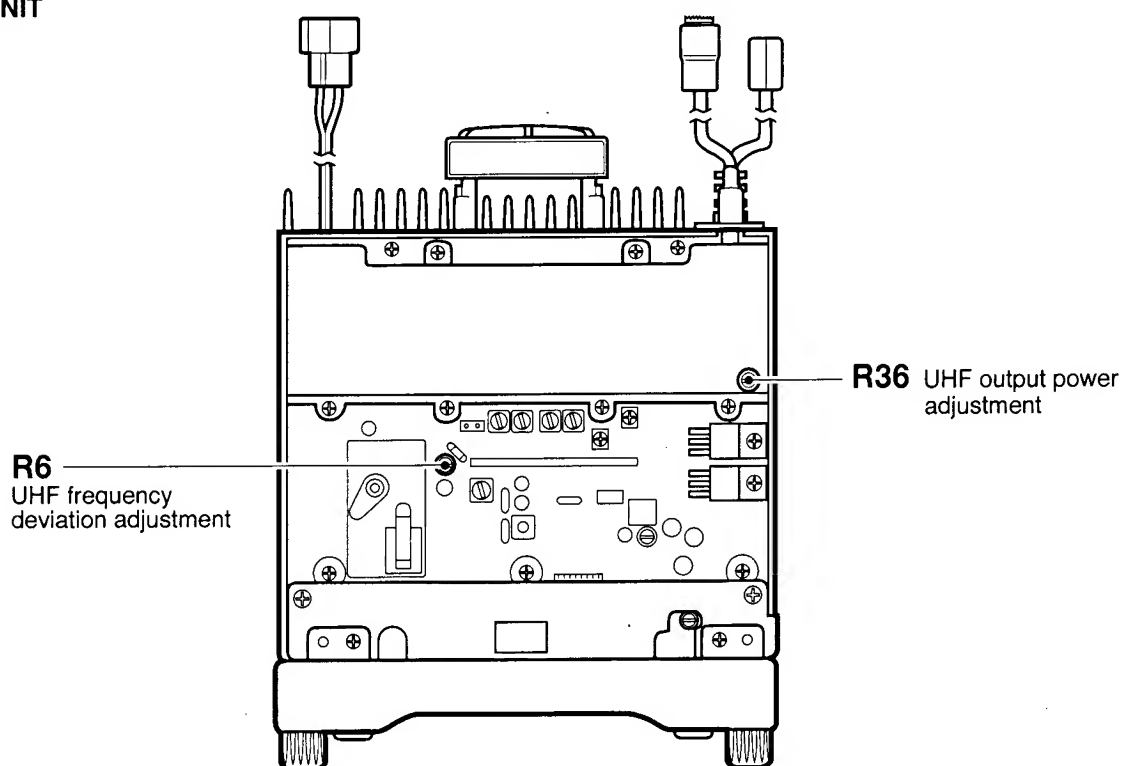
ADJUSTMENT		ADJUSTMENT CONDITIONS	MEASUREMENT		VALUE	ADJUSTMENT POINT	
			UNIT	LOCATION		UNIT	ADJUST
VHF OUTPUT POWER	1	<ul style="list-style-type: none"> <li>• VHF display: 146.000 MHz (USA, SEA versions) 145.000 MHz (All other versions)</li> <li>• [HI/LOW] switch : HI</li> <li>• Simplex</li> <li>• Transmitting</li> </ul>	Rear panel	Connect the RF power meter to the antenna connector.	45 W	MAIN-A	R30
	2	• [HI/LOW] switch : LOW1			4 – 6 W		Verify
	3	• [HI/LOW] switch : LOW2			9 – 11 W		
UHF OUTPUT POWER	1	<ul style="list-style-type: none"> <li>• UHF display: 445.000 MHz (USA version) 435.000 MHz (All other versions)</li> <li>• [HI/LOW] switch : HI</li> </ul>			35 W	MAIN-B	R36
	2	• [HI/LOW] switch : LOW1			4 – 6 W		Verify
	3	• [HI/LOW] switch : LOW2			9 – 11 W		
FREQUENCY DEVIATION	1	<ul style="list-style-type: none"> <li>• VHF display: 146.000 MHz (USA, SEA versions) 145.000 MHz (All other versions)</li> <li>• [HI/LOW] switch : HI</li> <li>• [TONE] switch : OFF</li> <li>• Connect the audio generator to the microphone connector and set as: 20 mV/1.0 kHz</li> <li>• Set the FM deviation meter as: HPF : 50 Hz LPF : 20 kHz De-emphasis : OFF Detector : (P-P)/2</li> <li>• Transmitting</li> </ul>	Rear panel	Connect the FM deviation meter to the antenna connector through the attenuator.	±4.8 kHz	MAIN-A	R5
	2	<ul style="list-style-type: none"> <li>• UHF display: 445.000 MHz (USA version) 435.000 MHz (All other versions)</li> </ul>			±4.8 kHz	MAIN-B	R6
TONE DEVIATION (USA, KOR versions only)	1	<ul style="list-style-type: none"> <li>• UHF display: 445.000 MHz (USA version) 435.000 MHz (KOR version)</li> <li>• [TONE] switch : ON</li> <li>• Apply no signal to the microphone connector.</li> <li>• Set the tone frequency as : 88.5 Hz</li> <li>• Set the FM deviation meter as: HPF : OFF LPF : 20 kHz De-emphasis : OFF Detector : (P-P)/2</li> <li>• Transmitting</li> </ul>	Rear panel	Connect the FM deviation meter to the antenna connector through the attenuator.	±0.8 kHz	TONE	R28

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• MAIN-A UNIT



• MAIN-B UNIT





# SECTION 5 PARTS LIST

## [DISPLAY UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1130004190	S.IC	LC7582A
IC2	1130004190	S.IC	LC7582A
Q1	1510000690	S.TRANSISTOR	2SA1734 (TE12R)
Q2	1510000690	S.TRANSISTOR	2SA1734 (TE12R)
Q3	1530000160	S.TRANSISTOR	2SC2712-Y (TE85RTEM)
D1	1750000020	S.DIODE	1SS184 (TE85R)
D2	1750000020	S.DIODE	1SS184 (TE85R)
D3	1750000020	S.DIODE	1SS184 (TE85R)
D4	1750000020	S.DIODE	1SS184 (TE85R)
D5	1750000390	S.DIODE	1SS353 TE-17
R1	7030003650	S.RESISTOR	ERJ3GEYJ 563 V (56 kΩ)
R3	7030000020	S.RESISTOR	MCR10EZJH 1 Ω (010)
R4	7030000020	S.RESISTOR	MCR10EZJH 1 Ω (010)
R5	7030000020	S.RESISTOR	MCR10EZJH 1 Ω (010)
R6	7030000020	S.RESISTOR	MCR10EZJH 1 Ω (010)
R8	7030003650	S.RESISTOR	ERJ3GEYJ 563 V (56 kΩ)
R9	7030001130	S.RESISTOR	MCR50JZJH 100 Ω (101)
R10	7030001130	S.RESISTOR	MCR50JZJH 100 Ω (101)
R11	7030003500	S.RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)
R12	7030003500	S.RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)
R13	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
C1	4030006830	S.CERAMIC	C1608 SL 1H 331J-T-A
C2	4030006830	S.CERAMIC	C1608 SL 1H 331J-T-A
C3	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C4	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
DS1	5030001090	LCD	FTD-12634AAH
DS3	5080000330	LAMP	HRS-7219A-RE
DS4	5080000330	LAMP	HRS-7219A-RE
DS5	5080000330	LAMP	HRS-7219A-RE
DS6	5080000330	LAMP	HRS-7219A-RE
W1	7030003860	S.JUMPER	ERJ3GE JPW V
J1	6510012690	CONNECTOR	53020-0810
J2	6510016560	S.CONNECTOR	3-176314-0
J3	6510016160	S.CONNECTOR	52465-1090
S1	2260002050	S.SWITCH	EVQ-PJX 05M [M/CALL]
S2	2260002050	S.SWITCH	EVQ-PJX 05M [V/MHz]
S3	2260002050	S.SWITCH	EVQ-PJX 05M [M/CALL]
S4	2260002050	S.SWITCH	EVQ-PJX 05M [V/MHz]
S5	2260002050	S.SWITCH	EVQ-PJX 05M [POWER]
S6	2260002050	S.SWITCH	EVQ-PJX 05M [MUTE]
S7	2260002050	S.SWITCH	EVQ-PJX 05M [SET]
S8	2260002050	S.SWITCH	EVQ-PJX 05M [SPCH]
S9	2260002050	S.SWITCH	EVQ-PJX 05M [DTMF]
S10	2260002050	S.SWITCH	EVQ-PJX 05M [DUP]
EP1	0910041281	PCB	B 4101A
EP2	8930030861	LCD CONTACT	SRCN-1479SC2

## [VR-A BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	
D1	1750000010	S.DIODE	1SS181 (TE85R)
R1	7210002380	VARIABLE	TP96D00A-10KB10KA20F (1481) [VOL/SQ]
J1	6510016590	S.CONNECTOR	53309-1890
S1	2250000160	ENCODER	TP90N00AE20-15F (1352) [Tuning dial]
EP1	0910041290	PCB	B 4102

## [VR-B BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	
D1	1750000010	S.DIODE	1SS181 (TE85R)
R1	7210002380	VARIABLE	TP96D00A-10KB10KA20F (1481) [VOL/SQ]
J1	6510016090	S.CONNECTOR	53309-1090
S1	2250000160	ENCODER	TP90N00AE20-15F (1352) [Tuning dial]
EP1	0910041300	PCB	B 4103

## [LOGIC UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1130005720	S.IC	TC7W04F (TE12L)
IC2	1110000960	S.IC	NUM4558M(T1)
IC5	1190000260	S.IC	24LC08BTI/SN
IC6	1140003990	S.IC	HD404449A24H
IC7	1130007340	S.IC	S-80745SL-A9-T1
Q1	1530000160	S.TRANSISTOR	2SC2712-Y (TE85RTEM)
Q2	1530000160	S.TRANSISTOR	2SC2712-Y (TE85RTEM)
Q3	1530000160	S.TRANSISTOR	2SC2712-Y (TE85RTEM)
Q4	1590001390	S.FET	2SJ144-Y (TE85R)
Q5	1590001390	S.FET	2SJ144-Y (TE85R)
Q6	1590000420	S.TRANSISTOR	RN1404 (TE85R)
Q7	1530001950	S.TRANSISTOR	2SC2712-GR (TE85R)
Q8	1530001950	S.TRANSISTOR	2SC2712-GR (TE85R)
Q9	1530001950	S.TRANSISTOR	2SC2712-GR (TE85R)
Q10	1590001390	S.FET	2SJ144-Y (TE85R)
Q11	1530000160	S.TRANSISTOR	2SC2712-Y (TE85RTEM)
Q12	1530000160	S.TRANSISTOR	2SC2712-Y (TE85RTEM)
Q13	1590000410	S.TRANSISTOR	RN2404 (TE85R)
Q14	1590000420	S.TRANSISTOR	RN1404 (TE85R)
Q15	1590001390	S.FET	2SJ144-Y (TE85R)
Q16	1590001390	S.FET	2SJ144-Y (TE85R)
Q17	1510000110	S.TRANSISTOR	2SA1162-Y (TE85R)
Q18	1530000160	S.TRANSISTOR	2SC2712-Y (TE85RTEM)
Q19	1590000420	S.TRANSISTOR	RN1404 (TE85R)
Q20	1510000110	S.TRANSISTOR	2SA1162-Y (TE85R)
Q21	1530001950	S.TRANSISTOR	2SC2712-GR (TE85R)
Q22	1590000410	S.TRANSISTOR	RN2404 (TE85R)
Q23	1530001950	S.TRANSISTOR	2SC2712-GR (TE85R)
D3	1750000390	S.DIODE	1SS353 TE-17
D4	1730002280	S.ZENER	MA8091-M(TX)

S.=Surface mount

## [LOGIC UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
D5	1750000070	S.DIODE	1SS226 (TE85R)
D6	1750000010	S.DIODE	1SS181 (TE85R)
D7	17500000390	S.DIODE	1SS353 TE-17
D8	17500000010	S.DIODE	1SS181 (TE85R) (SEA)
	17500000030	S.DIODE	1SS187 (TE85R) (KOR, AUS)
	17500000040	S.DIODE	1SS190 (TE85R) (EUR, ITA, USA)
D10	17500000030	S.DIODE	1SS187 (TE85R) (KOR)
	17500000040	S.DIODE	1SS190 (TE85R) (EUR, ITA)
D12	17500000390	S.DIODE	1SS353 TE-17 (ITA, USA, SEA)
D13	17500000390	S.DIODE	1SS353 TE-17 (ITA, USA, SEA)
D14	17500000390	S.DIODE	1SS353 TE-17 (USA, SEA)
D15	17500000390	S.DIODE	1SS353 TE-17 (USA)
D16	17100000600	DIODE	1SS254 (EUR, ITA, KOR, AUS, SEA)
D17	17100000600	DIODE	1SS254 (EUR, AUS)
D18	17500000390	S.DIODE	1SS353 TE-17 (EUR, USA, AUS, SEA)
D19	17500000390	S.DIODE	1SS353 TE-17 (EUR, USA, AUS, SEA)
D20	17500000390	S.DIODE	1SS353 TE-17 (EUR, ITA, KOR, AUS, SEA)
X1	60500008960	S.XTAL	CR-479 (3.987456MHz)
R1	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R2	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)
R3	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R4	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R5	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R6	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)
R7	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R8	7030003610	S.RESISTOR	ERJ3GEYJ 273 V (27 kΩ)
R9	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R10	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)
R11	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R12	7030003610	S.RESISTOR	ERJ3GEYJ 273 V (27 kΩ)
R13	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R14	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R15	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R16	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R17	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R18	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R19	7030003470	S.RESISTOR	ERJ3GEYJ 182 V (1.8 kΩ)
R20	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R21	7030003570	S.RESISTOR	ERJ3GEYJ 123 V (12 kΩ)
R22	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R23	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R24	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R25	7030003840	S.RESISTOR	ERJ3GEYJ 225 V (2.2 MΩ)
R26	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R27	7030003840	S.RESISTOR	ERJ3GEYJ 225 V (2.2 MΩ)
R28	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R29	7310003560	S.TRIMMER	RV-220 (RH03AVAJ4) 223
R30	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R31	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R32	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R33	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)
R34	7030003420	S.RESISTOR	ERJ3GEYJ 681 V (680 Ω)
R35	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R36	7030003390	S.RESISTOR	ERJ3GEYJ 391 V (390 Ω)
R37	7030003770	S.RESISTOR	ERJ3GEYJ 584 V (580 kΩ)
R38	7030003750	S.RESISTOR	ERJ3GEYJ 394 V (390 kΩ)
R39	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R40	7030003790	S.RESISTOR	ERJ3GEYJ 824 V (820 kΩ)
R41	7030003610	S.RESISTOR	ERJ3GEYJ 273 V (27 kΩ)
R42	7030003710	S.RESISTOR	ERJ3GEYJ 184 V (180 kΩ)
R43	7030003550	S.RESISTOR	ERJ3GEYJ 822 V (8.2 kΩ)
R44	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)
R45	7030003570	S.RESISTOR	ERJ3GEYJ 123 V (12 kΩ)

## [LOGIC UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
R46	7030003670	S.RESISTOR	ERJ3GEYJ 823 V (82 kΩ)
R47	7030003670	S.RESISTOR	ERJ3GEYJ 823 V (82 kΩ)
R48	7030003670	S.RESISTOR	ERJ3GEYJ 823 V (82 kΩ)
R49	7030003450	S.RESISTOR	ERJ3GEYJ 122 V (1.2 kΩ)
R50	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R51	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R52	7030003620	S.RESISTOR	ERJ3GEYJ 333 V (33 kΩ)
R53	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R54	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R55	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R56	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R57	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R58	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R59	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R60	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R61	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R62	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R63	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R64	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R65	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R66	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R67	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R68	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R69	7410000750	S.ARRAY	EXB-V4V 104JV (100 kΩ)
R70	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R71	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R72	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R73	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R74	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R75	7030003760	S.RESISTOR	ERJ3GEYJ 474 V (470 kΩ)
R76	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R78	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R79	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R80	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R81	7030003840	S.RESISTOR	ERJ3GEYJ 225 V (2.2 MΩ)
R82	7030003660	S.RESISTOR	ERJ3GEYJ 683 V (68 kΩ)
R83	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R84	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R85	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R86	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R87	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R88	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R89	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R90	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R91	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R92	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R93	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R94	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R95	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R96	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R97	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)
R98	7030003690	S.RESISTOR	ERJ3GEYJ 124 V (120 kΩ)
R99	7030003680	S.RESISTOR	ERJ3GEYJ 683 V (68 kΩ)
R100	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)
R101	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)
R102	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R103	7410000720	S.ARRAY	EXB-V8V 473JV (47 kΩ)
R107	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R108	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R109	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R110	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R111	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R112	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R113	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R114	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R115	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)
R116	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R117	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R118	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R119	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R120	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R121	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R122	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R123	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R124	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R125	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)

S.=Surface mount

## [LOGIC UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
R126	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R127	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R128	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R129	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R130	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R131	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R132	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)
R133	7030003690	S.RESISTOR	ERJ3GEYJ 124 V (120 kΩ)
R134	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R135	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R136	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R137	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R138	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R139	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R140	7030003790	S.RESISTOR	ERJ3GEYJ 824 V (820 kΩ)
R141	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R142	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R143	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R144	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R145	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R146	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R147	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
C1	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C2	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C3	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C4	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C5	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C6	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C7	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C8	4030008680	S.CERAMIC	C2012 JF 1C 105Z-T-A
C9	4030008680	S.CERAMIC	C2012 JF 1C 105Z-T-A
C10	4030008680	S.CERAMIC	C1608 JB 1H 102K-T-A
C11	4510004640	S.ELECTROLITIC	ECEV1CA470P
C12	4510004630	S.ELECTROLITIC	ECEV1CA100R
C13	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C14	4030008680	S.CERAMIC	C1608 JB 1H 102K-T-A
C15	4030008680	S.CERAMIC	C1608 JB 1C 223K-T-A
C16	4030008670	S.CERAMIC	C1608 JB 1H 222K-T-A
C17	4030008920	S.CERAMIC	C1608 JB 1C 473K-T-A
C18	4030008920	S.CERAMIC	C1608 JB 1C 473K-T-A
C19	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C20	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C21	4510004440	S.ELECTROLITIC	ECEV1HA010R
C22	4030008900	S.CERAMIC	C1608 JB 1C 333K-T-A
C23	4030007020	S.CERAMIC	C1608 CH 1H 120J-T-A
C24	4030008960	S.CERAMIC	C2012 JB 1C 104K-T-A
C25	4030008680	S.CERAMIC	C2012 JF 1C 105Z-T-A
C26	4030009490	S.CERAMIC	C1608 JB 1H 821K-T-A
C27	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C28	4030008650	S.CERAMIC	C1608 JB 1H 320J-T-A
C29	4030006740	S.CERAMIC	C1608 SL 1H 832J-T-A
C30	4510004640	S.ELECTROLITIC	ECEV1CA470P
C31	4030006750	S.CERAMIC	C1608 SL 1H 101J-T-A
C32	4030008680	S.CERAMIC	C2012 JF 1C 105Z-T-A
C33	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C34	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C35	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C36	4550002950	S.TANTALUM	TESVA 0J 335M1-8L
C37	4030008680	S.CERAMIC	C1608 JB 1H 102K-T-A
C38	4030008680	S.CERAMIC	C1608 JB 1H 102K-T-A
C39	4030008680	S.CERAMIC	C1608 JB 1H 102K-T-A
C40	4030008680	S.CERAMIC	C1608 JB 1H 102K-T-A
C41	4030008680	S.CERAMIC	C1608 JB 1H 102K-T-A
C43	4030008680	S.CERAMIC	C1608 JB 1H 102K-T-A
C44	4550000530	S.TANTALUM	TESVA 1V 104M1-8L
C45	4030007030	S.CERAMIC	C1608 CH 1H 150J-T-A
C46	4030007030	S.CERAMIC	C1608 CH 1H 150J-T-A
C47	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C48	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C49	4510005590	S.ELECTROLITIC	ECEV0JA331P
C51	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C52	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C53	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C54	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A

## [LOGIC UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
C55	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
W1	7120000390	JUMPER	JPW 01H (ITA, USA, SEA)
W2	8900004760	CABLE	OPC-462 [MIC]
W3	7030003860	S.JUMPER	ERJ3GE JPW V
W4	7030003860	S.JUMPER	ERJ3GE JPW V
J1	6510013140	CONNECTOR	19R-JE
J2	6510013940	CONNECTOR	15R-JE
J3	6510012720	CONNECTOR	53020-1410
J4	6510018570	S.CONNECTOR	52465-1291
J5	6510016200	CONNECTOR	53047-0810
J6	6510016580	S.CONNECTOR	52588-1890
J7	6510016550	S.CONNECTOR	6-176313-0
EP1	0910041273	PCB	B 4100C

## [MAIN-A UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1130004200	S.IC	TC4S86F (TE85R)
IC2	1150000910	IC	SC1125
IC3	1110003340	S.IC	μPC358GR-T1
IC4	1110002200	S.IC	MC3372MR
IC5	1130004730	S.IC	BU4066BF-T1
IC6	1130005810	S.IC	BU4094BF-T1
IC7	1130005810	S.IC	BU4094BF-T1
IC8	1130003760	S.IC	TC4S81F (TE85R)
IC9	1110002540	IC	LA4445
Q1	1530000160	S.TRANSISTOR	2SC2712-Y (TE85RTEM)
Q2	1510000690	S.TRANSISTOR	2SA1734 (TE12R)
Q3	1530002050	S.TRANSISTOR	2SC3661-TA
Q4	1530002030	S.TRANSISTOR	2SC3772-3-TA
Q5	1560000360	S.FET	2SK209-Y (TE85R)
Q6	1510000110	S.TRANSISTOR	2SA1162-Y (TE85R)
Q7	1530002030	S.TRANSISTOR	2SC3772-3-TA
Q8	1590000390	TRANSISTOR	MRF-559
Q9	1590000420	S.TRANSISTOR	RN1404 (TE85R)
Q10	1590000420	S.TRANSISTOR	RN1404 (TE85R)
Q11	1520000390	TRANSISTOR	2SB1135 R
Q12	1530000160	S.TRANSISTOR	2SC2712-Y (TE85RTEM)
Q13	1590000360	S.FET	2SJ106-Y (TE85R)
Q14	1530002030	S.TRANSISTOR	2SC3772-3-TA
Q15	1530000160	S.TRANSISTOR	2SC2712-Y (TE85RTEM)
Q16	1530001950	S.TRANSISTOR	2SC2712-GR (TE85R)
Q17	1530001950	S.TRANSISTOR	2SC2712-GR (TE85R)
Q18	1590000830	S.TRANSISTOR	FMG2 T149
Q19	1580000550	S.FET	3SK241-(TX)
Q20	1530002030	S.TRANSISTOR	2SC3772-3-TA
Q21	1580000360	S.FET	3SK177-T2B U73
Q22	1590000420	S.TRANSISTOR	RN1404 (TE85R)
Q24	1590000480	S.TRANSISTOR	RN1402 (TE85R)
Q25	1590000460	S.TRANSISTOR	RN1402 (TE85R)
Q26	1590001000	S.TRANSISTOR	RN2427 (TE85R)
Q27	1590001000	S.TRANSISTOR	RN2427 (TE85R)
Q28	1530000160	S.TRANSISTOR	2SC2712-Y (TE85RTEM)
Q29	1530000160	S.TRANSISTOR	2SC2712-Y (TE85RTEM)
Q30	1530000160	S.TRANSISTOR	2SC2712-Y (TE85RTEM)
Q31	1530000160	S.TRANSISTOR	2SC2712-Y (TE85RTEM)
Q32	1530000160	S.TRANSISTOR	2SC2712-Y (TE85RTEM)
Q33	1530000160	S.TRANSISTOR	2SC2712-Y (TE85RTEM)
Q34	1530002550	S.TRANSISTOR	2SC3326-B (TE85R)
Q35	1530002550	S.TRANSISTOR	2SC3326-B (TE85R)
Q36	1530002550	S.TRANSISTOR	2SC3326-B (TE85R)
Q37	1530000160	S.TRANSISTOR	2SC2712-Y (TE85RTEM)
Q38	1520000200	S.TRANSISTOR	2SB798-T2 DK

S.=Surface mount

## [MAIN-A UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
D1	1750000060	S.DIODE	1SS198 (TE85R)
D3	1750000080	S.DIODE	1SS153-T2
D4	1750000080	S.DIODE	1SS153-T2
D5	1750000060	S.DIODE	1SS198 (TE85R)
D6	1790000490	S.DIODE	HSM88AS-TR
D7	1790000490	S.DIODE	HSM88AS-TR
D8	1710000310	DIODE	MI407
D9	1710000290	DIODE	MI308
D10	1710000290	DIODE	MI308
D11	1750000070	S.DIODE	1SS228 (TE85R)
D12	1750000060	S.DIODE	1SS198 (TE85R)
D13	1730000730	S.ZENER	RD6.2M-T2B2
D14	1750000070	S.DIODE	1SS228 (TE85R)
D15	1790000490	S.DIODE	HSM88AS-TR
D16	1790000450	S.DIODE	MA862(TX)
D17	1720000220	S.VARICAP	1SV168-T2B
D18	1720000220	S.VARICAP	1SV168-T2B
D19	1720000220	S.VARICAP	1SV168-T2B
D20	1720000220	S.VARICAP	1SV168-T2B
D21	1790000450	S.DIODE	MA862(TX)
D22	1750000020	S.DIODE	1SS184 (TE85R)
D23	1730000730	S.ZENER	RD6.2M-T2B2
F11	2020000550	CERAMIC	CFUM455E
F12	2010001670	XTAL	FL-207 UM-1 (17.200MHz)
X1	6070000080	DISCRIMINATOR	CDBM455C16
X2	6050008940	XTAL	CR-477 (16.745MHz)
L1	6200000830	S.COIL	LQH 3N 3R3M
L2	6200003420	S.COIL	NL 322522T-R15J-3
L3	6200000770	S.COIL	LQN 2A 68NM
L4	6200000130	S.COIL	LQN 2A 47NM
L5	6110001680	COIL	LA-254
L6	6110001550	COIL	LA-235
L7	6110001540	COIL	LA-234
L8	6170000180	COIL	LW-19
L9	6110001610	COIL	LA-244
L10	6110001620	COIL	LA-245
L11	6110001610	COIL	LA-244
L12	6110001550	COIL	LA-235
L13	6110001550	COIL	LA-235
L14	6200000020	S.COIL	LQH 3N 101K
L15	6150003150	COIL	LS-331
L16	6150003150	COIL	LS-331
L17	6150002810	COIL	LS-291
L18	6150002810	COIL	LS-291
L19	6150002810	COIL	LS-291
L20	6150002810	COIL	LS-291
L21	6150003120	COIL	LS-321
L22	6150003120	COIL	LS-321
R1	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R2	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R3	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R4	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R5	4810001110	TRIMMER	EVM-LGGA00 B15 (104)
R6	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R7	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R8	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R9	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R10	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R11	7030003220	S.RESISTOR	ERJ3GEYJ 150 V (15 Ω)
R12	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R13	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R14	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R15	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)
R16	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)
R17	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R18	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R19	7030003420	S.RESISTOR	ERJ3GEYJ 681 V (680 Ω)
R20	7030003700	S.RESISTOR	ERJ3GEYJ 154 V (150 kΩ)

## [MAIN-A UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
R21	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R22	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)
R23	7030003370	S.RESISTOR	ERJ3GEYJ 271 V (270 Ω)
R24	7030003230	S.RESISTOR	ERJ3GEYJ 180 V (18 Ω)
R25	7030003370	S.RESISTOR	ERJ3GEYJ 271 V (270 Ω)
R26	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R27	7030003500	S.RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)
R28	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R29	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R30	4810001100	TRIMMER	EVM-LGGA00 B34 (303)
R31	7030003570	S.RESISTOR	ERJ3GEYJ 123 V (12 kΩ)
R32	7030003490	S.RESISTOR	ERJ3GEYJ 272 V (2.7 kΩ)
R33	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)
R34	7030003490	S.RESISTOR	ERJ3GEYJ 272 V (2.7 kΩ)
R35	7030001010	S.RESISTOR	MCR50JZHJ 10 Ω (100)
R36	7030003530	S.RESISTOR	ERJ3GEYJ 562 V (5.6 kΩ)
R37	7030001150	S.RESISTOR	MCR50JZHJ 150 Ω (151)
R38	7030001190	S.RESISTOR	MCR50JZHJ 330 Ω (331)
R39	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R40	7030003340	S.RESISTOR	ERJ3GEYJ 151 V (150 Ω)
R41	7030003620	S.RESISTOR	ERJ3GEYJ 333 V (33 kΩ)
R42	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R43	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R44	7030003340	S.RESISTOR	ERJ3GEYJ 151 V (150 Ω)
R45	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R46	7030001130	S.RESISTOR	MCR50JZHJ 100 Ω (101)
R47	7030003790	S.RESISTOR	ERJ3GEYJ 824 V (820 kΩ)
R48	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R49	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R50	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R51	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R52	7030003570	S.RESISTOR	ERJ3GEYJ 123 V (12 kΩ)
R53	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)
R54	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R55	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R57	7030003530	S.RESISTOR	ERJ3GEYJ 562 V (5.6 kΩ)
R58	7030003470	S.RESISTOR	ERJ3GEYJ 182 V (1.8 kΩ)
R59	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R60	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R61	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R62	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R63	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R64	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R65	7030003760	S.RESISTOR	ERJ3GEYJ 474 V (470 kΩ)
R66	7030003430	S.RESISTOR	ERJ3GEYJ 821 V (820 Ω)
R67	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R68	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R69	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R70	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R71	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R72	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R73	7030003700	S.RESISTOR	ERJ3GEYJ 154 V (150 kΩ)
R74	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R75	4810001110	TRIMMER	EVM-LGGA00 B15 (104)
R76	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R77	7030003840	S.RESISTOR	ERJ3GEYJ 225 V (2.2 MΩ)
R78	7030003470	S.RESISTOR	ERJ3GEYJ 182 V (1.8 kΩ)
R79	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R80	7030003490	S.RESISTOR	ERJ3GEYJ 272 V (2.7 kΩ)
R81	7030003700	S.RESISTOR	ERJ3GEYJ 154 V (150 kΩ)
R82	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R83	7030003370	S.RESISTOR	ERJ3GEYJ 271 V (270 Ω)
R84	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R85	7030003550	S.RESISTOR	ERJ3GEYJ 822 V (8.2 kΩ)
R86	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R87	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R88	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R89	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R90	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R91	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R92	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R93	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)
R94	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)
R95	7030003650	S.RESISTOR	ERJ3GEYJ 563 V (56 kΩ)
R96	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R97	7030003250	S.RESISTOR	ERJ3GEYJ 270 V (27 Ω)

S.=Surface mount

## [MAIN-A UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
R98	7030003230	S.RESISTOR	ERJ3GEYJ 180 V (18 Ω)
R99	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R100	7030003610	S.RESISTOR	ERJ3GEYJ 273 V (27 kΩ)
R101	7030003580	S.RESISTOR	ERJ3GEYJ 153 V (15 kΩ)
R102	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R103	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R104	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R105	7030003760	S.RESISTOR	ERJ3GEYJ 474 V (470 kΩ)
R106	7030003760	S.RESISTOR	ERJ3GEYJ 474 V (470 kΩ)
R107	7030003760	S.RESISTOR	ERJ3GEYJ 474 V (470 kΩ)
R108	7030003760	S.RESISTOR	ERJ3GEYJ 474 V (470 kΩ)
R109	7030003760	S.RESISTOR	ERJ3GEYJ 474 V (470 kΩ)
R110	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R111	7030003760	S.RESISTOR	ERJ3GEYJ 474 V (470 kΩ)
R112	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R113	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R114	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R115	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R116	7030003640	S.RESISTOR	ERJ3GEYJ 474 V (470 kΩ)
R117	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R118	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R119	7030003760	S.RESISTOR	ERJ3GEYJ 474 V (470 kΩ)
R120	7030003760	S.RESISTOR	ERJ3GEYJ 474 V (470 kΩ)
R121	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R122	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R123	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R124	7030003380	S.RESISTOR	ERJ3GEYJ 331 V (330 Ω)
R125	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R126	7030003380	S.RESISTOR	ERJ3GEYJ 331 V (330 Ω)
R127	7030003760	S.RESISTOR	ERJ3GEYJ 474 V (470 kΩ)
R128	7030003760	S.RESISTOR	ERJ3GEYJ 474 V (470 kΩ)
R129	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R130	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R131	7030003740	S.RESISTOR	ERJ3GEYJ 334 V (330 kΩ)
R132	7030003280	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R133	7030003500	S.RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)
R134	7030003650	S.RESISTOR	ERJ3GEYJ 563 V (56 kΩ)
R135	7030003630	S.RESISTOR	ERJ3GEYJ 393 V (39 kΩ)
R136	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R137	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R138	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R139	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R140	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R141	7030003740	S.RESISTOR	ERJ3GEYJ 334 V (330 kΩ)
R142	7030003500	S.RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)
R143	7030003650	S.RESISTOR	ERJ3GEYJ 563 V (56 kΩ)
R144	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)
R145	7030003630	S.RESISTOR	ERJ3GEYJ 393 V (39 kΩ)
R146	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R147	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R148	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R149	7030003620	S.RESISTOR	ERJ3GEYJ 333 V (33 kΩ)
R150	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R151	7030003620	S.RESISTOR	ERJ3GEYJ 333 V (33 kΩ)
R152	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R153	7030003620	S.RESISTOR	ERJ3GEYJ 333 V (33 kΩ)
R154	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R155	7030003550	S.RESISTOR	ERJ3GEYJ 822 V (8.2 kΩ)
R156	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R157	7030003790	S.RESISTOR	ERJ3GEYJ 824 V (820 kΩ)
R158	7030003570	S.RESISTOR	ERJ3GEYJ 123 V (12 kΩ)
R159	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R160	7030000100	S.RESISTOR	MCR10EZJH 4.7 Ω (4R7)
R161	7030000100	S.RESISTOR	MCR10EZJH 4.7 Ω (4R7)
R162	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R163	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
C1	4550002950	S.TANTALUM	TESVA 0J 335M1-8L
C2	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C3	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C4	4030006860	S.CERAMIC	C2012 JF 1C 105Z-T-A
C5	4510003150	ELECTROLITIC	35 SS 33UF
C6	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C7	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C8	4510002640	ELECTROLITIC	25 SS 47UF

## [MAIN-A UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
C9	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C10	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C11	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C12	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C13	4030006570	S.CERAMIC	C1608 SL 1H 060D-T-A
C14	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C15	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C16	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C17	4030006850	S.CERAMIC	C1608 JB 1H 471K-T-A
C18	4030006570	S.CERAMIC	C1608 SL 1H 060D-T-A
C19	4030006610	S.CERAMIC	C1608 SL 1H 100D-T-A
C20	4030006860	S.CERAMIC	C1608 SL 1H 220J-T-A
C21	4030006610	S.CERAMIC	C1608 SL 1H 100D-T-A
C22	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C23	4030006580	S.CERAMIC	C1608 SL 1H 070D-T-A
C24	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C25	4030006860	S.CERAMIC	C1608 SL 1H 220J-T-A
C26	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C27	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C28	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C29	4030006860	S.CERAMIC	C1608 SL 1H 220J-T-A
C31	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C32	4030006610	S.CERAMIC	C1608 SL 1H 100D-T-A
C33	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C34	4030006860	S.CERAMIC	C1608 SL 1H 220J-T-A
C35	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C36	4550000280	TANTALUM	DN 1V 100M
C37	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C38	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C39	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C40	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C41	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C42	4010003880	CERAMIC	DD06 SL 150K 500V
C43	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C44	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C45	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C46	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C47	4010003880	CERAMIC	DD06 SL 150K 500V
C48	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C49	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C50	4010004110	CERAMIC	DD05 B 471K 500V
C51	4510001350	ELECTROLITIC	16 MS5 10UF
C52	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C53	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C54	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C55	4010004120	CERAMIC	DD07 B 102K 500V
C56	4010003890	CERAMIC	DD06 SL 180K 500V
C57	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C58	4010003930	CERAMIC	DD06 SL 270K 500V
C59	4010003930	CERAMIC	DD06 SL 270K 500V
C60	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C62	4010003890	CERAMIC	DD06 SL 180K 500V
C63	4030006700	S.CERAMIC	C1608 SL 1H 390J-T-A
C64	4030006860	S.CERAMIC	C1608 SL 1H 220J-T-A
C65	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C66	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C67	4030006860	S.CERAMIC	C1608 JF 1C 104Z-T-A
C68	4030006760	S.CERAMIC	C1608 SL 1H 121J-T-A
C69	4030006830	S.CERAMIC	C1608 JF 1C 104Z-T-A
C70	4030006710	S.CERAMIC	C1608 SL 1H 470J-T-A
C71	4030006860	S.CERAMIC	C1608 SL 1H 220J-T-A
C72	4030006830	S.CERAMIC	C1608 JF 1C 104Z-T-A
C73	4030006860	S.CERAMIC	C2012 JF 1C 105Z-T-A
C74	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C75	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C76	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C77	4030006830	S.CERAMIC	C1608 JF 1C 104Z-T-A
C78	4510002640	ELECTROLITIC	25 SS 47UF
C79	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C80	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C81	4030006890	S.CERAMIC	C1608 JF 1H 103Z-T-A
C82	4030006690	S.CERAMIC	C1608 SL 1H 330J-T-A
C83	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C84	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C85	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C86	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A

S.=Surface mount



## [MAIN-A UNIT]

REF. NO.	ORDER NO.	DESCRIPTION
C87	4510002930	ELECTROLITIC 50 SS R47UF
C88	4030006660	S.CERAMIC C1608 SL 1H 220J-T-A
C89	4030006720	S.CERAMIC C1608 SL 1H 560J-T-A
C90	4030006630	S.CERAMIC C1608 JF 1C 104Z-T-A
C91	4030006540	S.CERAMIC C1608 SL 1H 030C-T-A
C92	4030006860	S.CERAMIC C1608 JB 1H 102K-T-A
C93	4030006830	S.CERAMIC C1608 JF 1C 104Z-T-A
C94	4030006900	S.CERAMIC C1608 JB 1E 103K-T-A
C95	4030006730	S.CERAMIC C1608 SL 1H 680J-T-A
C96	4030006670	S.CERAMIC C1608 SL 1H 270J-T-A
C97	4030006900	S.CERAMIC C1608 JB 1E 103K-T-A
C98	4030006860	S.CERAMIC C1608 JB 1H 102K-T-A
C99	4030006590	S.CERAMIC C1608 SL 1H 080D-T-A
C100	4030006630	S.CERAMIC C1608 SL 1H 150J-T-A
C101	4030006510	S.CERAMIC C1608 SL 1H 0R5C-T-A
C102	4030006850	S.CERAMIC C1608 JB 1H 471K-T-A
C103	4030006610	S.CERAMIC C1608 SL 1H 100D-T-A
C104	4030006630	S.CERAMIC C1608 SL 1H 150J-T-A
C105	4030006520	S.CERAMIC C1608 SL 1H 010C-T-A
C106	4030006510	S.CERAMIC C1608 SL 1H 0R5C-T-A
C107	4030006600	S.CERAMIC C1608 SL 1H 090D-T-A
C108	4030006860	S.CERAMIC C1608 JB 1H 102K-T-A
C109	4030006540	S.CERAMIC C1608 SL 1H 030C-T-A
C110	4030006860	S.CERAMIC C1608 JB 1H 102K-T-A
C111	4030006850	S.CERAMIC C1608 JB 1H 471K-T-A
C112	4030006630	S.CERAMIC C1608 SL 1H 150J-T-A
C113	4030006860	S.CERAMIC C1608 JB 1H 102K-T-A
C114	4030006860	S.CERAMIC C1608 JB 1H 102K-T-A
C115	4030006690	S.CERAMIC C1608 SL 1H 330J-T-A
C116	4030006850	S.CERAMIC C1608 JB 1H 471K-T-A
C117	4030006640	S.CERAMIC C1608 SL 1H 180J-T-A
C118	4030006860	S.CERAMIC C1608 JB 1H 102K-T-A
C119	4030006750	S.CERAMIC C1608 SL 1H 101J-T-A
C120	4030006670	S.CERAMIC C1608 SL 1H 270J-T-A
C121	4030006590	S.CERAMIC C1608 SL 1H 080D-T-A
C122	4030006630	S.CERAMIC C1608 JF 1C 104Z-T-A
C123	4030006860	S.CERAMIC C2012 JF 1C 105Z-T-A
C124	4030006630	S.CERAMIC C1608 JF 1C 104Z-T-A
C125	4030006860	S.CERAMIC C2012 JF 1C 105Z-T-A
C126	4030006860	S.CERAMIC C1608 JB 1H 102K-T-A
C127	4030006630	S.CERAMIC C1608 JF 1C 104Z-T-A
C128	4030006860	S.CERAMIC C1608 JB 1H 102K-T-A
C129	4030006860	S.CERAMIC C1608 JB 1H 102K-T-A
C130	4030006860	S.CERAMIC C1608 JB 1H 102K-T-A
C131	4030006860	S.CERAMIC C1608 JB 1H 102K-T-A
C133	4030006860	S.CERAMIC C2012 JF 1C 105Z-T-A
C135	4030006670	S.CERAMIC C2012 JB 1H 562K-T-A
C136	4030006670	S.CERAMIC C2012 JB 1H 562K-T-A
C137	4030006470	S.CERAMIC C2012 JB 1H 153K-T-A
C138	4030006660	S.CERAMIC C2012 JB 1H 333K-T-A
C139	4030006630	S.CERAMIC C1608 JF 1C 104Z-T-A
C140	4030006630	S.CERAMIC C1608 JF 1C 104Z-T-A
C141	4030006470	S.CERAMIC C2012 JB 1H 153K-T-A
C142	4030006900	S.CERAMIC C1608 JB 1E 103K-T-A
C143	4030006900	S.CERAMIC C1608 JB 1E 103K-T-A
C144	4030006630	S.CERAMIC C1608 JF 1C 104Z-T-A
C145	4030006860	S.CERAMIC C2012 JF 1C 105Z-T-A
C146	4030006630	S.CERAMIC C1608 JF 1C 104Z-T-A
C147	4030006670	S.CERAMIC C2012 JB 1H 562K-T-A
C148	4030006670	S.CERAMIC C2012 JB 1H 562K-T-A
C149	4030006470	S.CERAMIC C2012 JB 1H 153K-T-A
C150	4030006660	S.CERAMIC C2012 JB 1H 333K-T-A
C151	4030006630	S.CERAMIC C1608 JF 1C 104Z-T-A
C152	4030006630	S.CERAMIC C1608 JF 1C 104Z-T-A
C153	4030006470	S.CERAMIC C2012 JB 1H 153K-T-A
C154	4030006900	S.CERAMIC C1608 JB 1E 103K-T-A
C155	4030006900	S.CERAMIC C1608 JB 1E 103K-T-A
C156	4550000270	S.TANTALUM TESVA 1E 474M1-8L
C157	4550000270	S.TANTALUM TESVA 1E 474M1-8L
C158	4030006630	S.CERAMIC C1608 JF 1C 104Z-T-A
C159	4550002890	S.TANTALUM TESVA 1A 225M1-8L
C160	4030006750	S.CERAMIC C1608 SL 1H 101J-T-A
C161	4030006750	S.CERAMIC C1608 SL 1H 101J-T-A
C162	4030006750	S.CERAMIC C1608 SL 1H 101J-T-A
C163	4030006750	S.CERAMIC C1608 SL 1H 101J-T-A
C164	4030006750	S.CERAMIC C1608 SL 1H 101J-T-A

## [MAIN-A UNIT]

REF. NO.	ORDER NO.	DESCRIPTION
C165	4030006750	S.CERAMIC C1608 SL 1H 101J-T-A
C166	4030006750	S.CERAMIC C1608 SL 1H 101J-T-A
C167	4030006750	S.CERAMIC C1608 SL 1H 101J-T-A
C168	4030006750	S.CERAMIC C1608 SL 1H 101J-T-A
C169	4030006750	S.CERAMIC C1608 SL 1H 101J-T-A
C170	4030006750	S.CERAMIC C1608 SL 1H 101J-T-A
C171	4030006750	S.CERAMIC C1608 SL 1H 101J-T-A
C172	4030006750	S.CERAMIC C1608 SL 1H 101J-T-A
C173	4030006750	S.CERAMIC C1608 SL 1H 101J-T-A
C174	4030006750	S.CERAMIC C1608 SL 1H 101J-T-A
C175	4030006750	S.CERAMIC C1608 SL 1H 101J-T-A
C176	4030006750	S.CERAMIC C1608 SL 1H 101J-T-A
C177	4510002380	ELECTROLITIC 16 SS 470UF (10X12.5)
C178	4510002640	ELECTROLITIC 25 SS 47UF
C179	4510002440	ELECTROLITIC 16 SS 220UF (8X11)
C180	4510002640	ELECTROLITIC 25 SS 47UF
C181	4510002730	ELECTROLITIC 10 SS 100UF
C182	4510002760	ELECTROLITIC 10 SS 470UF
C183	4510001720	ELECTROLITIC 16 SS 330UF (8X12.5)
C184	4510002730	ELECTROLITIC 10 SS 100UF
C185	4510002760	ELECTROLITIC 10 SS 470UF
C186	4030006760	S.CERAMIC C2012 X7R 1C 104K-T-A
C187	4030006760	S.CERAMIC C2012 X7R 1C 104K-T-A
C188	4030006860	S.CERAMIC C1608 JB 1H 102K-T-A
C189	4030006860	S.CERAMIC C2012 JF 1C 105Z-T-A
C190	4030006830	S.CERAMIC C1608 JF 1C 104Z-T-A
C191	4030006860	S.CERAMIC C1608 JB 1H 102K-T-A
C192	4030006870	S.CERAMIC C1608 JB 1H 222K-T-A
C193	4550000280	S.TANTALUM TESVB2 1A 475M-8L
C194	4030006850	S.CERAMIC C1608 JB 1H 471K-T-A
C195	4030006850	S.CERAMIC C1608 JB 1H 471K-T-A
C196	4030006850	S.CERAMIC C1608 JB 1H 471K-T-A
C197	4030006850	S.CERAMIC C1608 JB 1H 471K-T-A
C198	4030006850	S.CERAMIC C1608 JB 1H 471K-T-A
C199	4030006850	S.CERAMIC C1608 JB 1H 471K-T-A
W3	7120000380	JUMPER JPW 01 R-01
W4	7120000380	JUMPER JPW 01 R-01
W5	7120000380	JUMPER JPW 01 R-01
W6	7030003860	S.JUMPER ERJ3GE JPW V
W7	7030003860	S.JUMPER ERJ3GE JPW V
W8	7030003860	S.JUMPER ERJ3GE JPW V
W9	7030003860	S.JUMPER ERJ3GE JPW V
J1	6510013950	CONNECTOR SB4P-HVQ-B
J2	6510013950	CONNECTOR SB4P-HVQ-B
J3	6510013130	CONNECTOR 19PS-JE
J4	6510005020	CONNECTOR TXL-P03P-C1
J5	6450000140	CONNECTOR HSJ0807-01-010 [430MHz(440MHz) SP]
J6	6450000140	CONNECTOR HSJ0807-01-010 [144MHz SP]
J7	6510003390	CONNECTOR B03B-EH-S
EP1	0910033532	PCB B 3287B

## [VCO-A BOARD]

REF. NO.	ORDER NO.	DESCRIPTION
IC1	1130004200	S.IC TC4S66F (TE85R)
IC2	1130005700	S.IC M56760FP
Q1	1590000480	S.TRANSISTOR RN2402 (TE85R)
Q2	1530000160	S.TRANSISTOR 2SC2712-Y (TE85RTEM)
Q3	1560000360	S.FET 2SK209-Y (TE85R)
Q4	1530002490	S.TRANSISTOR 2SC3324-GR (TE85R)
Q5	1560000640	S.FET 2SK1740-TA
Q6	1530002240	S.TRANSISTOR 2SC3775-3-TA

S.=Surface mount

## [VCO-A BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	
D1	1720000220	S.VARICAP	1SV166-T2B
D2	1720000220	S.VARICAP	1SV166-T2B
L1	6200001580	S.COIL	LER 015T 1R8M
L2	6200001580	S.COIL	LER 015T 1R8M
L3	6200001580	S.COIL	LER 015T 1R8M
L4	6130002420	S.COIL	LB-270
L5	6200001230	S.COIL	MLF2012A 1R0M-T
R1	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R2	7030003530	S.RESISTOR	ERJ3GEYJ 562 V (5.6 kΩ)
R3	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R4	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R5	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R6	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R7	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R8	7030003530	S.RESISTOR	ERJ3GEYJ 562 V (5.6 kΩ)
R9	7030003450	S.RESISTOR	ERJ3GEYJ 122 V (1.2 kΩ)
R10	7030003410	S.RESISTOR	ERJ3GEYJ 561 V (560 Ω)
R11	7030000460	S.RESISTOR	MCR10EZJ 4.7 kΩ (472)
R12	7030003530	S.RESISTOR	ERJ3GEYJ 562 V (5.6 kΩ)
R13	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R14	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R15	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R16	7030003670	S.RESISTOR	ERJ3GEYJ 823 V (82 kΩ)
R17	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R18	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)
R19	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R20	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R21	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R22	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R23	7030003220	S.RESISTOR	ERJ3GEYJ 150 V (15 Ω)
R24	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R25	7030003220	S.RESISTOR	ERJ3GEYJ 150 V (15 Ω)
R26	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
C1	4030006850	S.CERAMIC	C1608 JB 1H 471K-T-A
C2	4030006860	S.CERAMIC	C2012 JF 1C 105Z-T-A
C3	4030004750	S.CERAMIC	C2012 JB 1H 103K-T-A
C4	4030006860	S.CERAMIC	C2012 JF 1C 105Z-T-A
C5	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C6	4550000940	S.TANTALUM	TESVB2 1D 225M-8L
C7	4550000940	S.TANTALUM	TESVB2 1D 225M-8L
C8	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C9	4550000550	S.TANTALUM	TESVA 1V 224M1-8L
C10	4030006830	S.CERAMIC	C1608 JF 1C 104Z-T-A
C11	4030006890	S.CERAMIC	C1608 JF 1H 103Z-T-A
C12	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C13	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C14	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C15	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C16	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C17	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C18	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C19	4030006920	S.CERAMIC	C1608 CH 1H 010C-T-A
C20	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C21	4030006850	S.CERAMIC	C1608 JB 1H 471K-T-A
C22	4030007010	S.CERAMIC	C1608 CH 1H 100D-T-A
C23	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C24	4030007010	S.CERAMIC	C1608 CH 1H 100D-T-A
C25	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
J1	6910006500	CONNECTOR	IMSA-9210B-1-07Z204-T
J2	6910006490	CONNECTOR	IMSA-9210B-1-06Z204-T
EP1	0910032833	PCB	B 3289C

## [MAIN-B UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	11300004200	S.IC	TC4S66F (TE85R)
IC2	1150000750	IC	SC1054
IC3	1110003340	S.IC	μPC358GR-T1
IC4	1110002200	S.IC	MC3372MR
IC5	1130005810	S.IC	BU4094BF-T1
IC6	1110001971	S.IC	μPC1676G-T1
IC7	1110002020	IC	TA7805S
IC8	1110001700	S.IC	TL499ACPS
IC9	1110000490	IC	AN6541
IC10	1180000420	S.IC	TA78L05F (TE12R)
Q1	1510000580	S.TRANSISTOR	2SA1362-GR (TE85R)
Q2	1530000160	S.TRANSISTOR	2SC2712-Y (TE85RTEM)
Q4	1530002360	S.TRANSISTOR	2SC2714-Y (TE85R)
Q5	1530002050	S.TRANSISTOR	2SC3661-TA
Q6	1530002240	S.TRANSISTOR	2SC3775-3-TA
Q7	1530002240	S.TRANSISTOR	2SC3775-3-TA
Q8	1590000390	TRANSISTOR	MRF-559
Q9	1590000420	S.TRANSISTOR	RN1404 (TE85R)
Q10	1590000420	S.TRANSISTOR	RN1404 (TE85R)
Q11	1520000380	TRANSISTOR	2SB1143 S
Q12	1530000160	S.TRANSISTOR	2SC2712-Y (TE85RTEM)
Q13	1530002020	S.TRANSISTOR	2SC3770-3-TA
Q14	1530000160	S.TRANSISTOR	2SC2712-Y (TE85RTEM)
Q15	1590000420	S.TRANSISTOR	RN1404 (TE85R)
Q16	1580000550	S.FET	3SK241-(TX)
Q17	1530002240	S.TRANSISTOR	2SC3775-3-TA
Q18	1580000360	S.FET	3SK177-T2B U73
Q20	1590000460	S.TRANSISTOR	RN1402 (TE85R)
Q21	1590000460	S.TRANSISTOR	RN1402 (TE85R)
Q22	1590000460	S.TRANSISTOR	RN1402 (TE85R)
Q23	1590000980	S.TRANSISTOR	DTB123EK T147
Q24	1590000980	S.TRANSISTOR	DTB123EK T147
Q25	1590000980	S.TRANSISTOR	DTB123EK T147
Q26	1520000230	TRANSISTOR	2SB909M Q
Q27	1530000160	S.TRANSISTOR	2SC2712-Y (TE85RTEM)
Q28	1530001940	S.TRANSISTOR	2SC2712-BL (TE85R)
Q29	1540000150	TRANSISTOR	2SD1225M R
Q30	1590001620	S.TRANSISTOR	UN521F(TX)
Q31	1520000270	S.TRANSISTOR	2SB1182 TL Q
D1	1730001120	S.ZENER	RD24M-T2B2
D2	1750000060	S.DIODE	1SS196 (TE85R)
D4	1750000080	S.DIODE	1SS153-T2
D5	1790000450	S.DIODE	MA862(TX)
D7	1790000490	S.DIODE	HSM88AS-TR
D8	1790000490	S.DIODE	HSM88AS-TR
D9	1710000310	DIODE	MI407
D10	1730000490	S.ZENER	RD6.8M-T2B2
D11	1790000490	S.DIODE	HSM88AS-TR
D12	1750000070	S.DIODE	1SS226 (TE85R)
D13	1790000450	S.DIODE	MA862(TX)
D14	1790000450	S.DIODE	MA862(TX)
D15	1750000070	S.DIODE	1SS226 (TE85R)
D16	1710000290	DIODE	MI308
D17	1710000290	DIODE	MI308
D18	1750000020	S.DIODE	1SS184 (TE85R)
D20	1750000020	S.DIODE	1SS184 (TE85R)
D21	1750000020	S.DIODE	1SS184 (TE85R)
D22	1750000060	S.DIODE	1SS196 (TE85R)
D23	1730000640	S.ZENER	RD4.3M-T2B1
D24	1750000060	S.DIODE	1SS196 (TE85R)
D25	1750000060	S.DIODE	1SS196 (TE85R)
D27	1790000700	DIODE	DSA3A1
D28	1750000060	S.DIODE	1SS196 (TE85R)
D29	1750000390	S.DIODE	1SS353 TE-17
D30	1730002320	S.ZENER	MA8051-M(TX)
FI1	2020000550	CERAMIC	CFUM455E
FI2	2010001610	MONOLITHIC	FL-202 (30.850MHz)
X1	6050008600	XTAL	CR-433 (12.80000MHz)
X2	6070000080	DISCRIMINATOR	CDBM455C16

S.=Surface mount



## [MAIN-B UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
X3	6050008950	XTAL	CR-478 (30.395MHz)
L1	6200000110	S.COIL	LQN 2A 33NM
L2	6200000090	S.COIL	LQN 2A 18NM
L3	6200000110	S.COIL	LQN 2A 33NM
L4	6200000720	S.COIL	LQN 2A 10NM
L5	6200000110	S.COIL	LQN 2A 33NM
L6	6200000090	S.COIL	LQN 2A 18NM
L7	6110001520	COIL	LA-232
L8	6170000180	COIL	LW-19
L9	6110002110	COIL	LA-382
L10	6110001520	COIL	LA-232
L11	6110001590	COIL	LA-242
L12	6110001520	COIL	LA-232
L13	6180001210	COIL	LAL 03NA 8R2K
L14	6150003220	COIL	LS-320
L15	6150002000	COIL	LS-284
L16	6200000090	S.COIL	LQN 2A 18NM
L17	6200000100	S.COIL	LQN 2A 22NM
L18	6150003240	COIL	LS-338 (HR5W)
L19	6150003230	COIL	LS-337 (HR5W)
L20	6200000720	S.COIL	LQN 2A 10NM
L21	6200000720	S.COIL	LQN 2A 10NM
L22	6110002110	COIL	LA-382
L23	6110001520	COIL	LA-232
L24	6200000090	S.COIL	LQN 2A 18NM
L25	6200000090	S.COIL	LQN 2A 18NM
L26	6180002620	COIL	RCR664D-101K
L27	6180001120	COIL	FL 5H 101K
R1	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R2	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R3	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R4	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)
R5	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R6	4610001110	TRIMMER	EVM-LGGA00 B15 (104)
R10	7030003590	S.RESISTOR	ERJ3GEYJ 183 V (18 kΩ)
R11	7030003740	S.RESISTOR	ERJ3GEYJ 334 V (330 kΩ)
R12	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R13	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R14	7030003380	S.RESISTOR	ERJ3GEYJ 331 V (330 Ω)
R15	7030003380	S.RESISTOR	ERJ3GEYJ 331 V (330 Ω)
R16	7030003460	S.RESISTOR	ERJ3GEYJ 152 V (1.5 kΩ)
R17	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R18	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)
R19	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R20	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R21	7030000260	S.RESISTOR	MCR10EZJH 100 Ω (101)
R22	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R23	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R24	7030003370	S.RESISTOR	ERJ3GEYJ 271 V (270 Ω)
R25	7030003230	S.RESISTOR	ERJ3GEYJ 180 V (18 Ω)
R26	7030003370	S.RESISTOR	ERJ3GEYJ 271 V (270 Ω)
R27	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R28	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R29	7030003450	S.RESISTOR	ERJ3GEYJ 122 V (1.2 kΩ)
R30	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R31	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R32	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R33	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R34	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R35	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)
R36	4610001100	TRIMMER	EVM-LGGA00 B34 (303)
R37	7030003500	S.RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)
R38	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)
R39	7030001050	S.RESISTOR	MCR50JZHJ 22 Ω (220)
R41	7010004130	RESISTOR	R20J 330 Ω
R42	7030000480	S.RESISTOR	MCR10EZJH 6.8 kΩ (682)
R43	7030000250	S.RESISTOR	MCR10EZJH 82 Ω (820)
R44	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R45	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R46	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R47	7010004720	RESISTOR	R50XJ 100 Ω
R48	7030000460	S.RESISTOR	MCR10EZJH 4.7 kΩ (472)

## [MAIN-B UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
R49	7030000270	S.RESISTOR	MCR10EZJH 120 Ω (121)
R50	7030003790	S.RESISTOR	ERJ3GEYJ 824 V (820 kΩ)
R51	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R52	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R53	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R54	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R55	7030003570	S.RESISTOR	ERJ3GEYJ 123 V (12 kΩ)
R56	7030003720	S.RESISTOR	ERJ3GEYJ 224 V (220 kΩ)
R57	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R58	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R59	7030000250	S.RESISTOR	MCR10EZJH 82 Ω (820)
R60	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R61	7030003470	S.RESISTOR	ERJ3GEYJ 182 V (1.8 kΩ)
R62	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R63	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R64	7030003450	S.RESISTOR	ERJ3GEYJ 122 V (1.2 kΩ)
R65	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R66	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R67	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R68	7030003340	S.RESISTOR	ERJ3GEYJ 151 V (150 Ω)
R69	7030003760	S.RESISTOR	ERJ3GEYJ 474 V (470 kΩ)
R70	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R71	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R72	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R73	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R74	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R75	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R76	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R77	4610001040	TRIMMER	EVM-LGGA00 B54 (503)
R78	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R79	7030003200	S.RESISTOR	ERJ3GEYJ 100 V (10 Ω)
R80	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R81	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R82	7030003350	S.RESISTOR	ERJ3GEYJ 181 V (180 Ω)
R83	7030003350	S.RESISTOR	ERJ3GEYJ 181 V (180 Ω)
R84	7030003260	S.RESISTOR	ERJ3GEYJ 330 V (33 Ω)
R85	7030003300	S.RESISTOR	ERJ3GEYJ 680 V (68 Ω)
R86	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R87	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R88	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R89	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R90	7030003380	S.RESISTOR	ERJ3GEYJ 331 V (330 Ω)
R91	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R92	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R93	7030003580	S.RESISTOR	ERJ3GEYJ 153 V (15 kΩ)
R94	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)
R95	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R96	7030003340	S.RESISTOR	ERJ3GEYJ 151 V (150 Ω)
R97	7030003250	S.RESISTOR	ERJ3GEYJ 270 V (27 Ω)
R98	7030003680	S.RESISTOR	ERJ3GEYJ 104 V (100 kΩ)
R99	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R100	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R101	7030003500	S.RESISTOR	ERJ3GEYJ 332 V (3.3 kΩ)
R104	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R106	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R107	7030003290	S.RESISTOR	ERJ3GEYJ 560 V (56 Ω)
R108	7030000240	S.RESISTOR	MCR10EZJH 68 Ω (680)
R109	7030003260	S.RESISTOR	ERJ3GEYJ 330 V (33 Ω)
R110	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R111	7030000380	S.RESISTOR	MCR10EZJH 1 kΩ (102)
R112	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R113	7030003490	S.RESISTOR	ERJ3GEYJ 272 V (2.7 kΩ)
R114	7030003690	S.RESISTOR	ERJ3GEYJ 124 V (120 kΩ)
R115	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R116	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R117	7010004830	RESISTOR	R50XJ 4.7 Ω
R118	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R119	7010004780	RESISTOR	R50XJ 470 Ω
R120	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R121	7520000030	POSISTOR	PTH59F04 BG 222TS
R122	7030003420	S.RESISTOR	ERJ3GEYJ 681 V (680 Ω)
C1	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C2	4030006890	S.CERAMIC	C1608 JF 1H 103Z-T-A
C3	4510002950	ELECTROLITIC	50 SS 2R2UF

S.=Surface mount

## [MAIN-B UNIT]

REF. NO.	ORDER NO.	DESCRIPTION
C4	4030008630	S.CERAMIC C1808 JF 1C 104Z-T-A
C5	4550002890	S.TANTALUM TESVA 1A 225M1-8L
C8	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C10	4030008980	S.CERAMIC C1808 CH 1H 070D-T-A
C12	4030008940	S.CERAMIC C1808 CH 1H 030C-T-A
C13	4030008430	S.CERAMIC C1808 JF 1H 223Z-T-A
C14	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C15	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C16	4030008430	S.CERAMIC C1808 JF 1H 223Z-T-A
C17	4030008860	S.CERAMIC C2012 JF 1C 105Z-T-A
C18	4030008850	S.CERAMIC C1808 JB 1H 471K-T-A
C19	4030008850	S.CERAMIC C1808 JB 1H 471K-T-A
C20	4030008850	S.CERAMIC C1808 JB 1H 471K-T-A
C21	4030008850	S.CERAMIC C1808 JB 1H 471K-T-A
C22	4510002840	ELECTROLITIC 25 SS 47UF
C23	4510002730	ELECTROLITIC 10 SS 100UF
C24	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C25	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C26	4030008590	S.CERAMIC C1808 SL 1H 080D-T-A
C27	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C28	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C29	4030008570	S.CERAMIC C1808 SL 1H 080D-T-A
C30	4030008580	S.CERAMIC C1808 SL 1H 070D-T-A
C31	4030008580	S.CERAMIC C1808 SL 1H 070D-T-A
C32	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C33	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C34	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C35	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C36	4550000950	S.TANTALUM TESVC 1D 475M-12L
C37	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C38	4030008860	S.CERAMIC C1808 SL 1H 220J-T-A
C39	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C40	4030008550	S.CERAMIC C1808 SL 1H 040C-T-A
C41	4030008610	S.CERAMIC C1808 SL 1H 100D-T-A
C42	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C43	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C44	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C45	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C46	4030008570	S.CERAMIC C1808 SL 1H 080D-T-A
C47	4030008570	S.CERAMIC C1808 SL 1H 080D-T-A
C48	4030008570	S.CERAMIC C1808 SL 1H 080D-T-A
C49	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C50	4550000260	TANTALUM DN 1V 100M
C51	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C52	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C53	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C54	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C55	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C56	4550002120	TANTALUM DN 1C 220M
C57	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C58	4030008850	S.CERAMIC C1808 JB 1H 471K-T-A
C59	4010003820	CERAMIC DD08 SL 050C 500V
C60	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C61	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C62	4010003820	CERAMIC DD08 SL 050C 500V
C63	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C64	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C65	4510002980	ELECTROLITIC 50 SS 10UF
C66	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C67	4010004110	CERAMIC DD05 B 471K 500V
C68	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C69	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C70	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C71	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C72	4010004110	CERAMIC DD05 B 471K 500V
C73	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C74	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C75	4010003820	CERAMIC DD08 SL 050C 500V
C76	4010003850	CERAMIC DD08 SL 080D 500V
C77	4010003830	CERAMIC DD08 SL 080D 500V
C78	4010003870	CERAMIC DD08 SL 120K 500V
C79	4010003820	CERAMIC DD08 SL 050C 500V
C80	4010003860	CERAMIC DD08 SL 100D 500V
C81	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C82	4030008630	S.CERAMIC C1808 JF 1C 104Z-T-A
C83	4030008630	S.CERAMIC C1808 JF 1C 104Z-T-A

## [MAIN-B UNIT]

REF. NO.	ORDER NO.	DESCRIPTION
C84	4030008630	S.CERAMIC C1808 JF 1C 104Z-T-A
C85	4030008640	S.CERAMIC C1808 SL 1H 180J-T-A
C86	4030008720	S.CERAMIC C1808 SL 1H 560J-T-A
C87	4030008690	S.CERAMIC C1808 SL 1H 330J-T-A
C88	4030008680	S.CERAMIC C2012 JF 1C 105Z-T-A
C89	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C90	4030008630	S.CERAMIC C1808 JF 1C 104Z-T-A
C91	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C92	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C93	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C94	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C95	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C96	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C97	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C98	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C99	4030008890	S.CERAMIC C1808 JF 1H 103Z-T-A
C100	4030008890	S.CERAMIC C1808 SL 1H 330J-T-A
C101	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C102	4030008890	S.CERAMIC C1808 JF 1H 103Z-T-A
C103	4030008890	S.CERAMIC C1808 JF 1H 103Z-T-A
C104	4510002930	ELECTROLITIC 50 SS R47UF
C105	4030008890	S.CERAMIC C1808 JF 1H 103Z-T-A
C106	4030008630	S.CERAMIC C1808 JF 1C 104Z-T-A
C107	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C108	4510002980	ELECTROLITIC 50 SS 10UF
C109	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C110	4030008710	S.CERAMIC C1808 SL 1H 470J-T-A
C111	4030008610	S.CERAMIC C1808 SL 1H 100D-T-A
C112	4030008890	S.CERAMIC C1808 JF 1H 103Z-T-A
C113	4030008660	S.CERAMIC C1808 SL 1H 220J-T-A
C114	4030008890	S.CERAMIC C1808 JF 1H 103Z-T-A
C115	4030008550	S.CERAMIC C1808 SL 1H 040C-T-A
C116	4020000860	CYLINDER UP125 SL 120J
C117	4030008850	S.CERAMIC C1808 JB 1H 471K-T-A
C118	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C119	4030008850	S.CERAMIC C1808 JB 1H 471K-T-A
C120	4030008550	S.CERAMIC C1808 SL 1H 040C-T-A
C121	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C122	4030008850	S.CERAMIC C1808 JB 1H 471K-T-A
C123	4030008850	S.CERAMIC C1808 JB 1H 471K-T-A
C124	4610001340	TRIMMER ECR-LA010 A12
C125	4030008180	S.CERAMIC C2012 UJ 1H 040C-T-A
C126	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C127	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C128	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C129	4610001340	TRIMMER ECR-LA010 A12
C130	4030008550	S.CERAMIC C1808 SL 1H 040C-T-A
C131	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C132	4030008690	S.CERAMIC C1808 SL 1H 330J-T-A
C133	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C134	4030008550	S.CERAMIC C1808 SL 1H 040C-T-A
C135	4030008550	S.CERAMIC C1808 SL 1H 040C-T-A
C137	4010005300	CERAMIC DD05 CH 080D 500V
C138	4030008630	S.CERAMIC C1808 JF 1C 104Z-T-A
C139	4030008630	S.CERAMIC C1808 JF 1C 104Z-T-A
C140	4510002940	ELECTROLITIC 50 SS 1UF
C141	4030008850	S.CERAMIC C1808 JB 1H 471K-T-A
C142	4030008610	S.CERAMIC C1808 SL 1H 100D-T-A
C143	4030008560	S.CERAMIC C1808 SL 1H 050C-T-A
C144	4030008610	S.CERAMIC C1808 SL 1H 100D-T-A
C145	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C146	4030008860	S.CERAMIC C2012 JF 1C 105Z-T-A
C147	4030008850	S.CERAMIC C1808 JB 1H 471K-T-A
C148	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C149	4030008860	S.CERAMIC C1808 JB 1H 102K-T-A
C151	4030008850	S.CERAMIC C1808 JB 1H 471K-T-A
C152	4030008680	S.CERAMIC C2012 JF 1C 105Z-T-A
C153	4030008680	S.CERAMIC C2012 JF 1C 105Z-T-A
C154	4030008750	S.CERAMIC C1808 SL 1H 101J-T-A
C155	4030008750	S.CERAMIC C1808 SL 1H 101J-T-A
C156	4030008750	S.CERAMIC C1808 SL 1H 101J-T-A
C157	4030008750	S.CERAMIC C1808 SL 1H 101J-T-A
C158	4030008750	S.CERAMIC C1808 SL 1H 101J-T-A
C159	4030008750	S.CERAMIC C1808 SL 1H 101J-T-A
C160	4030008750	S.CERAMIC C1808 SL 1H 101J-T-A
C161	4030008750	S.CERAMIC C1808 SL 1H 101J-T-A

## [MAIN-B UNIT]

REF. NO.	ORDER NO.	DESCRIPTION	
C162	4030006750	S.CERAMIC	C1608 SL 1H 101J-T-A
C163	4030006750	S.CERAMIC	C1608 SL 1H 101J-T-A
C164	4030006750	S.CERAMIC	C1608 SL 1H 101J-T-A
C165	4030006750	S.CERAMIC	C1608 SL 1H 101J-T-A
C166	4030006750	S.CERAMIC	C1608 SL 1H 101J-T-A
C167	4030006750	S.CERAMIC	C1608 SL 1H 101J-T-A
C168	4510002640	ELECTROLITIC	25 SS 47UF
C169	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C170	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C171	4030008680	S.CERAMIC	C2012 JF 1C 105Z-T-A
C172	4510003150	ELECTROLITIC	35 SS 33UF
C173	4510003150	ELECTROLITIC	35 SS 33UF
C174	4510003150	ELECTROLITIC	35 SS 33UF
C175	4550000320	TANTALUM	DN 1V 0R1M
C176	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C177	4510002870	ELECTROLITIC	25 SS 100UF
C178	4510002870	ELECTROLITIC	25 SS 100UF
C179	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C180	4510002640	ELECTROLITIC	25 SS 47UF
C181	4510002640	ELECTROLITIC	25 SS 47UF
C182	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C183	4510002730	ELECTROLITIC	10 SS 100UF
C184	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C185	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C186	4510002640	ELECTROLITIC	25 SS 47UF
C187	4510002380	ELECTROLITIC	16 SS 470UF (10X12.5)
C188	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C189	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C190	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C191	4030008660	S.CERAMIC	C1608 JB 1H 102K-T-A
C192	4030008660	S.CERAMIC	C1608 JB 1H 102K-T-A
C193	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C194	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C195	4030008660	S.CERAMIC	C1608 JB 1H 102K-T-A
C196	4030008660	S.CERAMIC	C1608 JB 1H 102K-T-A
C197	4510002980	ELECTROLITIC	50 SS 10UF
C198	4030006870	S.CERAMIC	C1608 JB 1H 222K-T-A
C199	4030006520	S.CERAMIC	C1608 SL 1H 010C-T-A
C200	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C201	4550006480	S.TANTALUM	TEMSVA 1C 475M-8L
W1	8900002450	CABLE	OPC-223 [ANT]
W2	8900004540	CABLE	OPC-453 [DC13.8V]
W3	7120000380	JUMPER	JPW 01 R-01
W4	7120000380	JUMPER	JPW 01 R-01
W5	7030003860	S.JUMPER	ERJ3GE JPW V
W6	7030003860	S.JUMPER	ERJ3GE JPW V
W7	7030003860	S.JUMPER	ERJ3GE JPW V
W8	7030003860	S.JUMPER	ERJ3GE JPW V
J1	6510017150	CONNECTOR	TMP-S01X-C1
J2	6510013930	CONNECTOR	15PS-JE
J3	6910003140	CONNECTOR	IMSA-9202B-1-02T
EP1	0910041322	PCB	B 4105B
EP11	6910000630	BEAD	FSOH070RN

## [VCO-B BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1130004200	S.IC	TC4S66F (TE85R)
IC2	1130005700	S.IC	M58760FP
Q1	1560000650	S.FET	2SK1577-2-T7
Q2	1530002240	S.TRANSISTOR	2SC3775-3-TA
Q3	1590000480	S.TRANSISTOR	RN2402 (TE85R)
Q4	1530000160	S.TRANSISTOR	2SC2712-Y (TE85RTEM)
Q5	1560000360	S.FET	2SK209-Y (TE85R)
Q6	1530002490	S.TRANSISTOR	2SC3324-GR (TE85R)
Q7	1530002030	S.TRANSISTOR	2SC3772-3-TA
D1	1720000220	S.VARICAP	1SV166-T2B
D2	1720000220	S.VARICAP	1SV166-T2B
L1	6200001560	S.COIL	LER 015T R68M
L2	6200001560	S.COIL	LER 015T R68M
L3	6130002450	S.COIL	LB-273
L4	6200001570	S.COIL	LER 015T 1R0M
L5	6200001570	S.COIL	LER 015T 1R0M
L6	6200001230	S.COIL	MLF2012A 1R0M-T
R1	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R2	7030003280	S.RESISTOR	ERJ3GEYJ 470 V (47 Ω)
R3	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R4	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R5	7030003310	S.RESISTOR	ERJ3GEYJ 820 V (82 Ω)
R6	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R7	7030003460	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R8	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R9	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
R10	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R11	7030003520	S.RESISTOR	ERJ3GEYJ 473 V (4.7 kΩ)
R12	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (4.7 kΩ)
R13	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R14	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R15	7030003640	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R16	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R17	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)
R18	7030003450	S.RESISTOR	ERJ3GEYJ 122 V (1.2 kΩ)
R19	7030003410	S.RESISTOR	ERJ3GEYJ 561 V (560 Ω)
R20	7030000460	S.RESISTOR	MCR10EZJH 4.7 kΩ (472)
R21	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R22	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R23	7030003220	S.RESISTOR	ERJ3GEYJ 150 V (15 Ω)
R24	7030003220	S.RESISTOR	ERJ3GEYJ 150 V (15 Ω)
R25	7030003220	S.RESISTOR	ERJ3GEYJ 150 V (15 Ω)
R26	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R27	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R28	7030003400	S.RESISTOR	ERJ3GEYJ 471 V (470 Ω)
C1	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C2	4030007110	S.CERAMIC	C1608 CH 1H 680J-T-A
C3	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C4	4030006550	S.CERAMIC	C1608 SL 1H 040C-T-A
C5	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C6	4030006910	S.CERAMIC	C1608 CH 1H 0R5C-T-A
C7	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C8	4030006610	S.CERAMIC	C1608 SL 1H 100D-T-A
C9	4030006890	S.CERAMIC	C1608 JF 1H 103Z-T-A
C10	4030006850	S.CERAMIC	C1608 JB 1H 471K-T-A
C11	4030006860	S.CERAMIC	C2012 JF 1C 105Z-T-A
C12	4030006860	S.CERAMIC	C2012 JF 1C 105Z-T-A
C13	4030005110	S.CERAMIC	C2012 JB 1E 473K-T-A
C14	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C15	4550000940	S.TANTALUM	TESVB2 1D 225M-8L
C16	4550000940	S.TANTALUM	TESVB2 1D 225M-8L
C17	4030006900	S.CERAMIC	C1608 JB 1E 103K-T-A
C18	4550000550	S.TANTALUM	TESVA 1V 224M1-8L
C19	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C20	4030006850	S.CERAMIC	C1608 JB 1H 471K-T-A
C21	4030006830	S.CERAMIC	C1608 JF 1C 104Z-T-A

S.=Surface mount



## [VCO-B BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	
C22	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C23	4030007010	S.CERAMIC	C1608 CH 1H 100D-T-A
C24	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C25	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C26	4030006860	S.CERAMIC	C1608 SL 1H 220J-T-A
J1	6910006500	CONNECTOR	IMS-9210B-1-07Z204-T
J2	6910006490	CONNECTOR	IMS-9210B-1-08Z204-T
EP1	0910032970	PCB	B 3290

## [B-BAND BOARD]

REF. NO.	ORDER NO.	DESCRIPTION	
Q1	1530002430	S.TRANSISTOR	2SC4315 (TE85R)
Q2	1580000360	S.FET	3SK177-T2B U73
Q3	1590000420	S.TRANSISTOR	RN1404 (TE85R)
Q4	1530002240	S.TRANSISTOR	2SC3775-3-TA
D1	1750000080	S.DIODE	1SS153-T2
L1	6200000720	S.COIL	LQN 2A 10NM
R1	7030003540	S.RESISTOR	ERJ3GEYJ 682 V (6.8 kΩ)
R2	7030003600	S.RESISTOR	ERJ3GEYJ 223 V (22 kΩ)
R3	7030003360	S.RESISTOR	ERJ3GEYJ 221 V (220 Ω)
R4	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R5	7030003340	S.RESISTOR	ERJ3GEYJ 151 V (150 Ω)
R6	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R7	7030003320	S.RESISTOR	ERJ3GEYJ 101 V (100 Ω)
R8	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
R9	7030003560	S.RESISTOR	ERJ3GEYJ 103 V (10 kΩ)
R10	7030003440	S.RESISTOR	ERJ3GEYJ 102 V (1 kΩ)
C1	4030006540	S.CERAMIC	C1608 SL 1H 030C-T-A
C2	4030006540	S.CERAMIC	C1608 SL 1H 030C-T-A
C3	4030006540	S.CERAMIC	C1608 SL 1H 030C-T-A
C4	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C5	4030006550	S.CERAMIC	C1608 SL 1H 040C-T-A
C6	4030006550	S.CERAMIC	C1608 SL 1H 040C-T-A
C7	4030006700	S.CERAMIC	C1608 SL 1H 390J-T-A
C8	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C9	4030006540	S.CERAMIC	C1608 SL 1H 030C-T-A
C10	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
C11	4030006860	S.CERAMIC	C1608 JB 1H 102K-T-A
EP1	0910042550	PCB	B 4254
EP2	6910003330	LEADFRAM	PD2.0-0.9-8

## [TONE UNIT] (USA, KOR only)

REF. NO.	ORDER NO.	DESCRIPTION	
IC1	1130007220	S.IC	AK2341-T
IC3	1130003610	S.IC	TC4SU69F (TE85R)
Q1	1530002840	S.TRANSISTOR	2SC4116-Y (TE85R)
X1	6050008720	XTAL	CR-446 (3.8864MHz)
R1	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)
R2	7030003480	S.RESISTOR	ERJ3GEYJ 222 V (2.2 kΩ)
R6	7030003580	S.RESISTOR	ERJ3GEYJ 153 V (15 kΩ)
R13	7030003740	S.RESISTOR	ERJ3GEYJ 334 V (330 kΩ)
R27	7030003580	S.RESISTOR	ERJ3GEYJ 153 V (15 kΩ)
R28	7310003600	S.TRIMMER	EVM-1XSX50 B54 (503)
R29	7030003520	S.RESISTOR	ERJ3GEYJ 472 V (4.7 kΩ)
R30	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
R31	7030003800	S.RESISTOR	ERJ3GEYJ 105 V (1 MΩ)
R32	7030003640	S.RESISTOR	ERJ3GEYJ 473 V (47 kΩ)
C1	4030006540	S.CERAMIC	C1608 SL 1H 030C-T-A
C7	4550003220	S.TANTALUM	TEMSVA 1E 105M-8L
C8	4550003220	S.TANTALUM	TEMSVA 1E 105M-8L
C17	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C18	4030008630	S.CERAMIC	C1608 JF 1C 104Z-T-A
C19	4550003030	S.TANTALUM	TEMSVA 0J 475M-8L
C20	4550003030	S.TANTALUM	TEMSVA 0J 475M-8L
C21	4030006870	S.CERAMIC	C1608 JB 1H 222K-T-A
C22	4030007040	S.CERAMIC	C1608 CH 1H 180J-T-A
C23	4030007040	S.CERAMIC	C1608 CH 1H 180J-T-A
C24	4030008680	S.CERAMIC	C2012 JF 1C 105Z-T-A
J1	6510016460	S.CONNECTOR	53309-1290
EP1	0910041332	PCB	B 4098B

S.=Surface mount

## SECTION 6 MECHANICAL PARTS AND DISASSEMBLY

### 6-1 CHASSIS PARTS

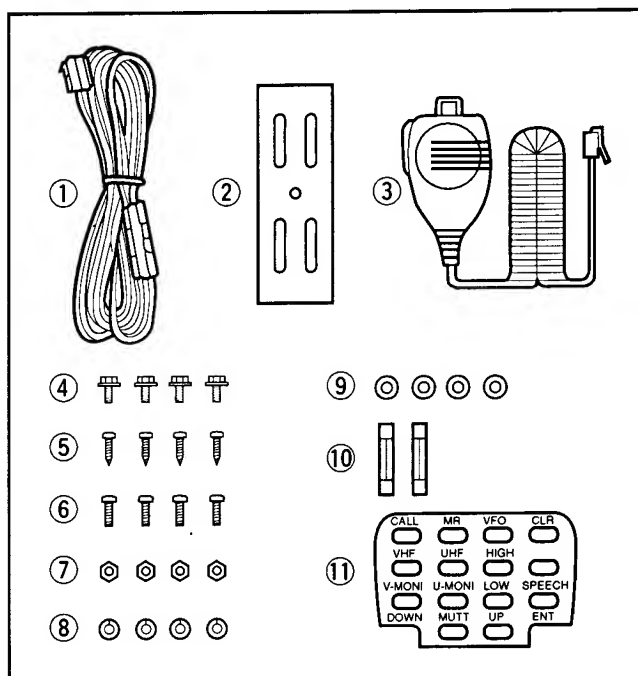
LABEL NO.	ORDER NO.	DESCRIPTION	QTY.
①	8610008960	Knob (TUNE) N-210	2
②	8610009040	Knob (UHF VOL) N-212 (A) (Orange)	1
③	8610009030	Knob (SQL) N-211 (A)	2
④	8610009050	Knob (VHF VOL) N-212 (B) (Green)	1
⑤	8210010590	1479 Front panel	1
⑥	8810006460	Screw FH M2 x 3	4
⑦	8930031720	1479 sponge	2
⑧	8930030580	1479 LCD rubber w/holder	1
⑨	5030001090	LCD FTD-12634AAH	1
⑩	8930030860	LCD contact SRCN-1479-W	2
⑪	8930030590	1479 LCD filter	1
⑫	8930031640	1479 Grounding plate	1
⑬	8010015320	1479 Sub chassis	1
⑭	8810002100	Screw FH M2.6 x 4	8
⑮	8010015310	1479 chassis	1
⑯	8810003160	Set screw (A) 3 x 6	23
⑰	8930025070	Sponge (CW)	1
⑱	810005250	1479 V-PA Shield case	1
⑲	8810001910	Screw PH M3 x 6 BS NI	10
⑳	8810003660	Icom screw (A) 5	2
㉑	8930020680	V-module holder	1

LABEL NO.	ORDER NO.	DESCRIPTION	QTY.
㉒	8900004760	Microphone cable OPC-462	1
㉓	8900002450	ANT cable OPC-223	1
㉔	6950000040	M-type cap (Black)	1
㉕	8510006440	ANT CAP	1
㉖	8930020900	Jack-plate	1
㉗	8810008190	Screw PH M3 x 12 ZK	4
㉘	8110005190	1479 Fan cover	1
㉙	8900004540	DC cable OPC-453	1
㉚	2710000350	Fan MF40B-12H	1
㉛	8930020860	IC-holder	1
㉜	8810003960	Set screw (A) 2.6 x 5	4
㉝	8210009930	1479 Reflector	1
㉞	8810000030	Screw PH M2 x 6	4
㉟	8830000790	VR nut (H)	4
㊱	8930020670	U-module holder	1
㊲	8810006230	Screw OH M2.6 x 4 ZK	16
㊳	8110005180	1479 Bottom cover	1
㊴	8930020661	Speaker plate (SP-PLATE-1)	1
㊵	2510000470	Speaker EAS-6P100SA	1
㊶	8810005170	1479 Top cover	1
㊷	8010012200	U-PA shield (A)	1

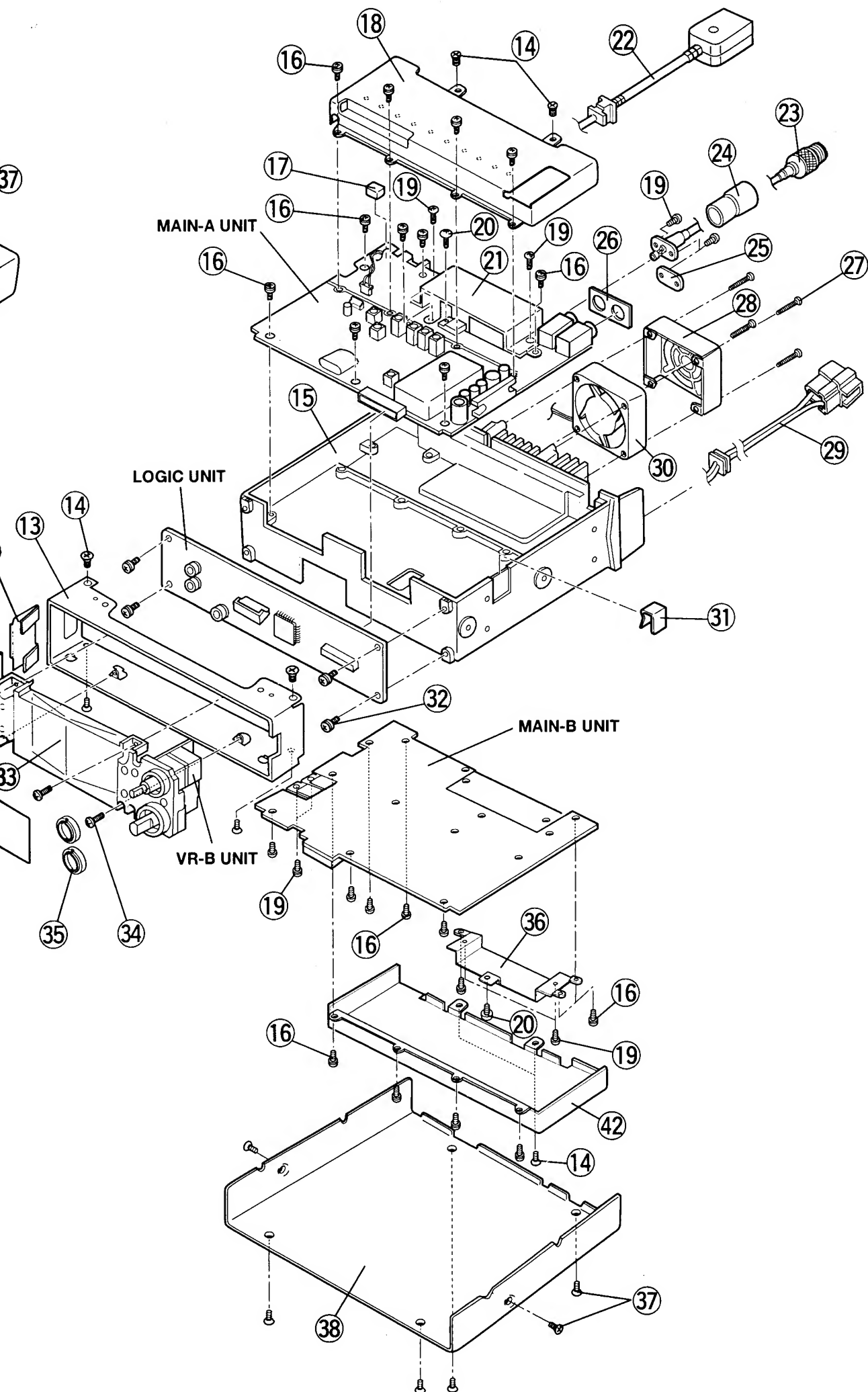
Screw abbreviations: PH: Pan head OH: Oval countersunk head  
FH: Flat head

### 6-2 ACCESSORIES

LABEL NO.	ORDER NO.	DESCRIPTION	QTY.
①	8930003750	DC power cable (OPC-345)	1
②	Optional product	Mounting bracket (MB-59)	1
③	Optional product	Microphone HM-77 (USA/KOR versions)	1
		Microphone HM-78 (AUS/SEA versions)	1
		Microphone HM-79 (EUR/ITA versions)	1
④	8820000530	Mounting bolt M4 x 8 NI	4
⑤	8810000950	Screw PH A0 5 x 16	4
⑥	8810000470	Screw PH (+, -) M5 x 12	4
⑦	8830000120	Nut (M5)	4
⑧	8850000390	Spring washer M5	4
⑨	8850000150	Flat washer M5 BS NI	4
⑩	5210000120	Fuses (15 A)	2
⑪	8310022240	Microphone sheet for HM-77	1







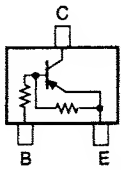
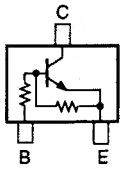


# SECTION 7 SEMI-CONDUCTOR INFORMATION

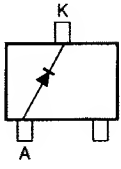
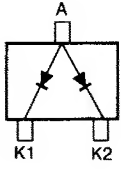
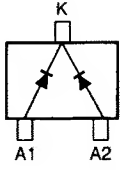
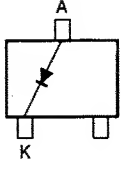
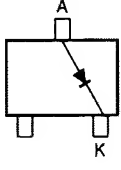
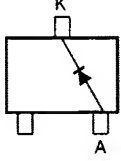
## 7-1 TRANSISTORS

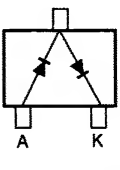


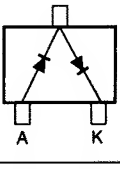
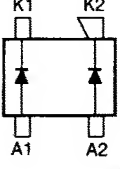


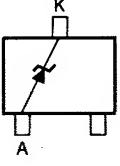
NAME	SYMBOL	INSIDE VIEW
2SA1162 Y	SY	
2SA1362 GR	AEG	
2SA1734	LB	
2SB798 DK	DK	
2SB909M Q	—	
2SB1135 R	—	
2SB1143 S	—	
2SB1182 TL Q	B1882	
2SC2712-BL	LL	
2SC2712-GR	LG	
2SC2712-Y	LY	
2SC2714-Y	QY	
2SC3324-GR	CBG	
2SC3326-B	CCB	
2SC3661	FY	
2SC3770	JY3	
2SC3772	LY3	
2SC3775	OY3	
2SC4116-Y	LY	

NAME	SYMBOL	INSIDE VIEW
2SC4315	MK	
2SD1225	—	
2SJ106-Y	VY	
2SJ144-Y	VY	
2SK1577-2	P2	
2SK1740	IJ	
2SK209-Y	XY	
3SK177	U73	
3SK241	DU	
DTB123 EK	<u>F12</u>	
FMG2	G2	
MRF-559	559	
RN1402	XB	
RN1404	XD	

NAME	SYMBOL	INSIDE VIEW
RN2402	YB	
RN2404	YD	
RN2427	RG	
UN521F(TX)	8O	

## 7-2 DIODES

NAME	SYMBOL	INSIDE VIEW
1SS153	A9	
1SS181	A3	
1SS184	B3	
1SS187	D3	
1SS190	E3	
1SS196	G3	

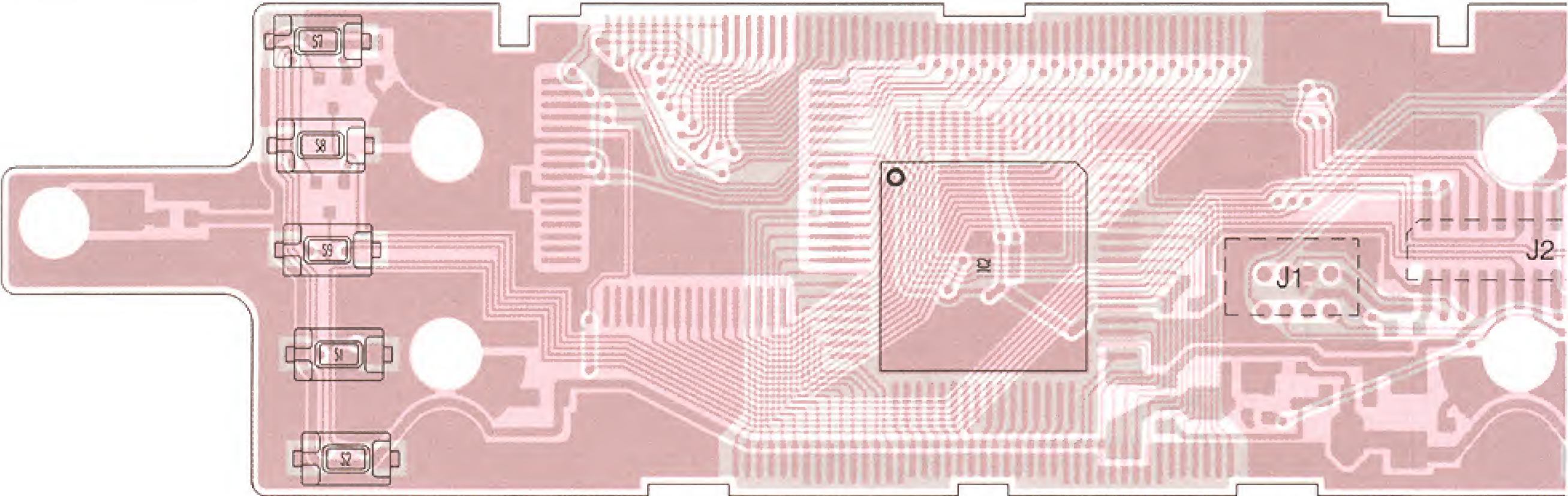
NAME	SYMBOL	INSIDE VIEW
1SS226	C3	
1SS254	yellow	
1SS353	C	
1SV166	—	
HSM88AS	C1	
MA862	M1I	
MA8051-M	5-1	
MA8091-M (TX)	9-1	
MI308	—	
MI407	—	
RD4.3M-T281	431	
RD6.2MB2	622	
RD6.8MB2	682	
RD24MB2	242	



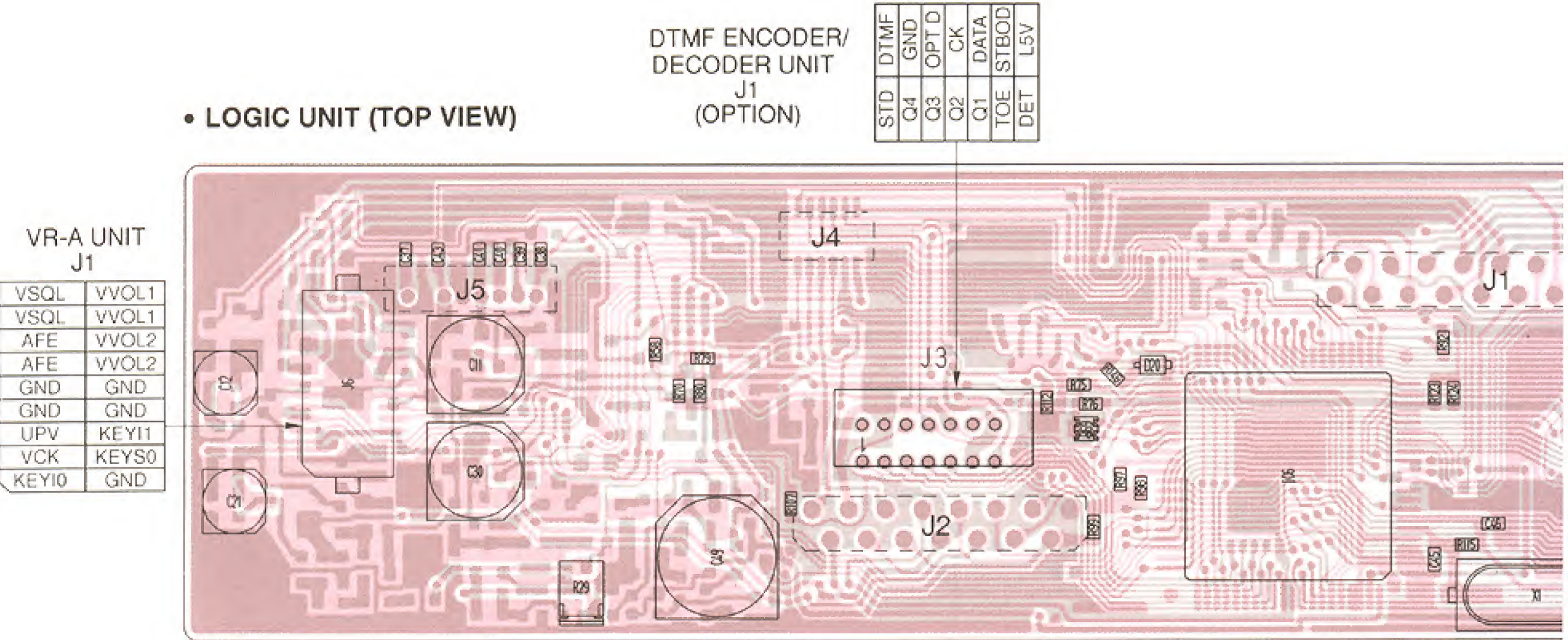
# SECTION 8 BOARD LAYOUTS

## 8-1 DISPLAY UNIT AND LOGIC UNIT

### • DISPLAY UNIT (TOP VIEW)



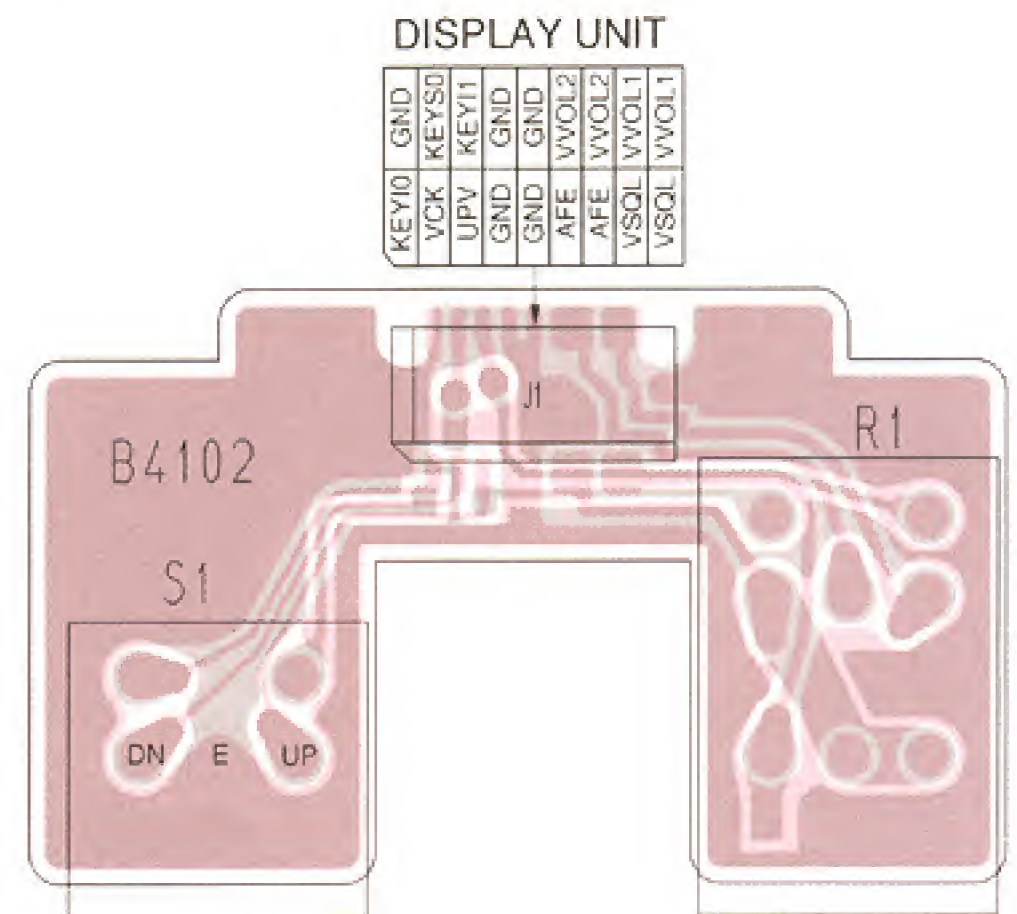
### • LOGIC UNIT (TOP VIEW)



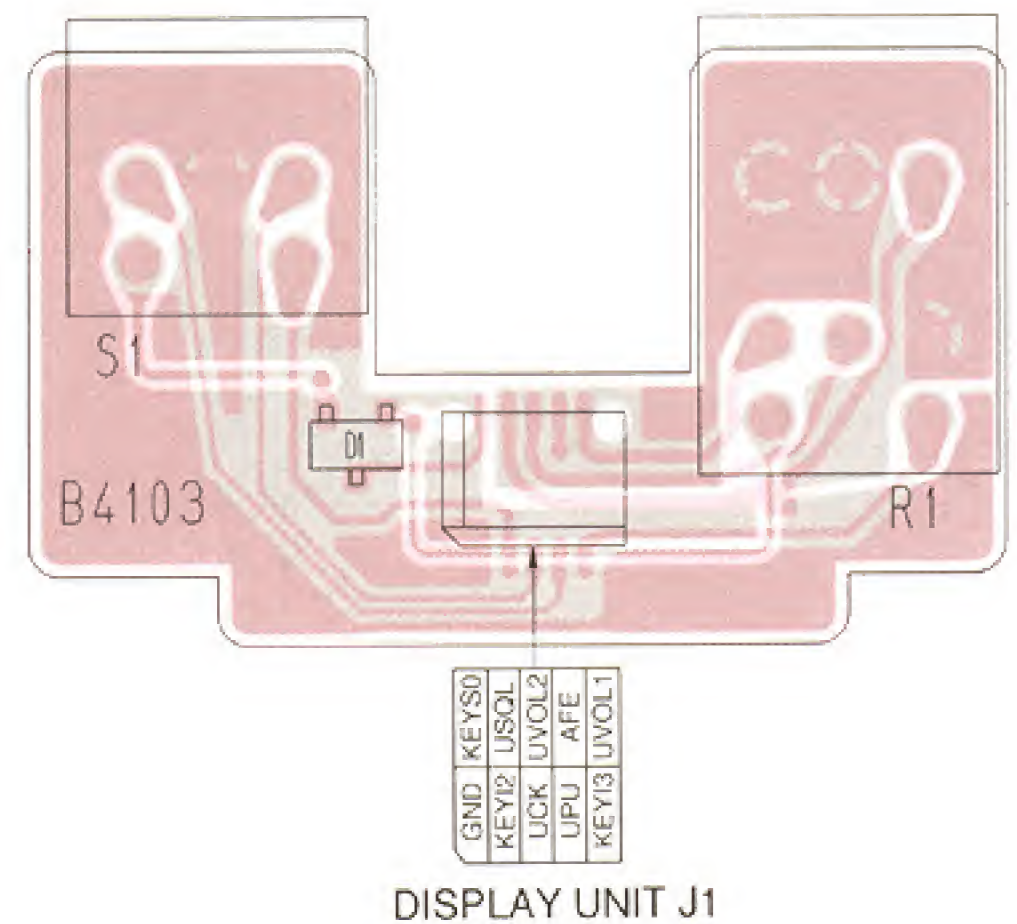


The combination of this page and the next page shows the unit layout in the same configuration as the actual P.C. Board.

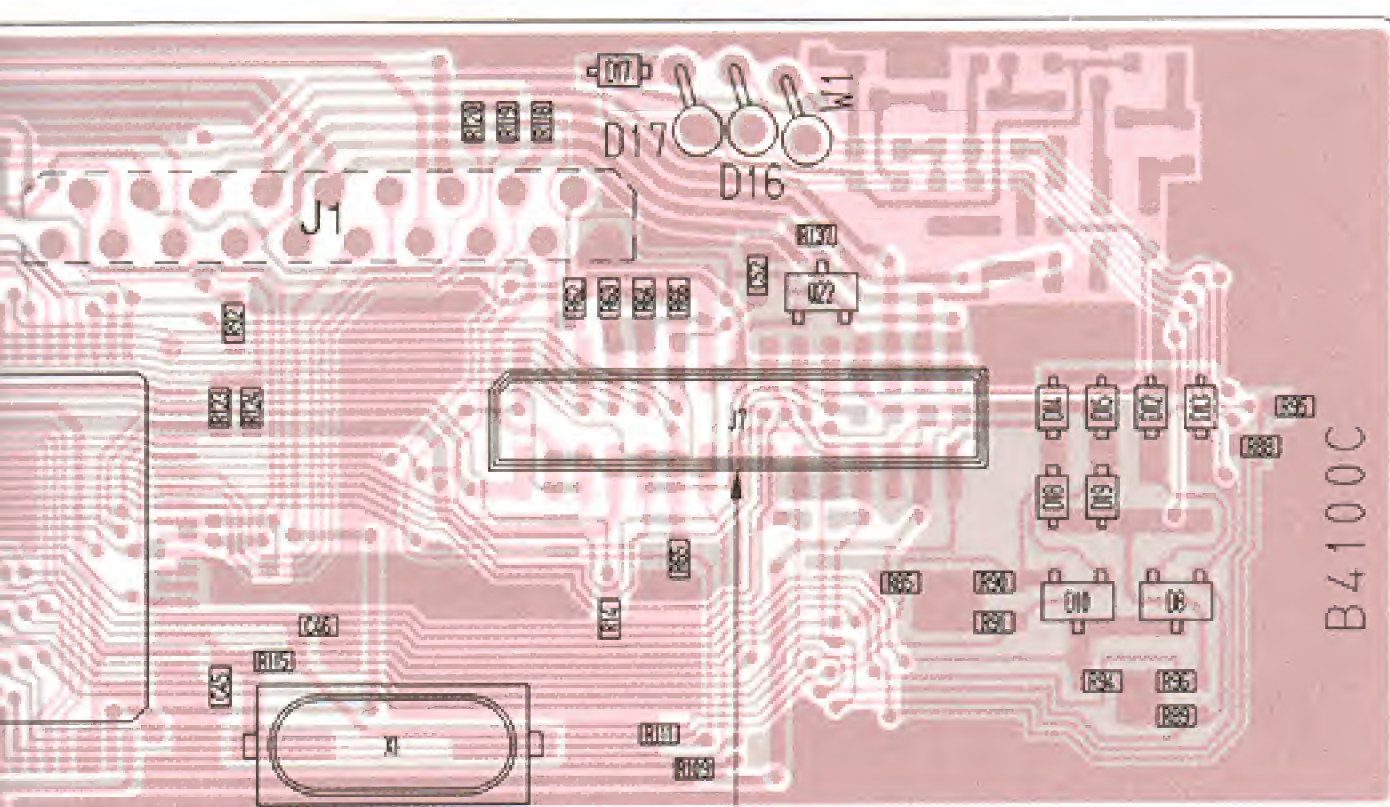
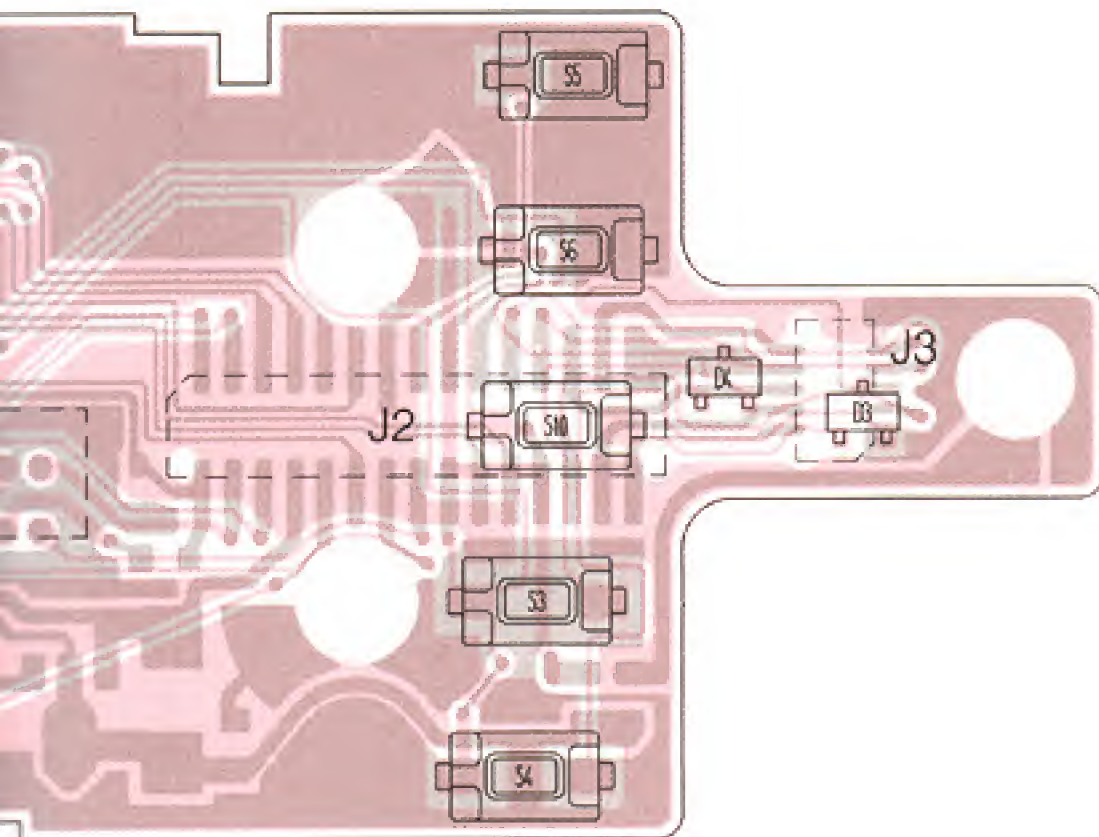
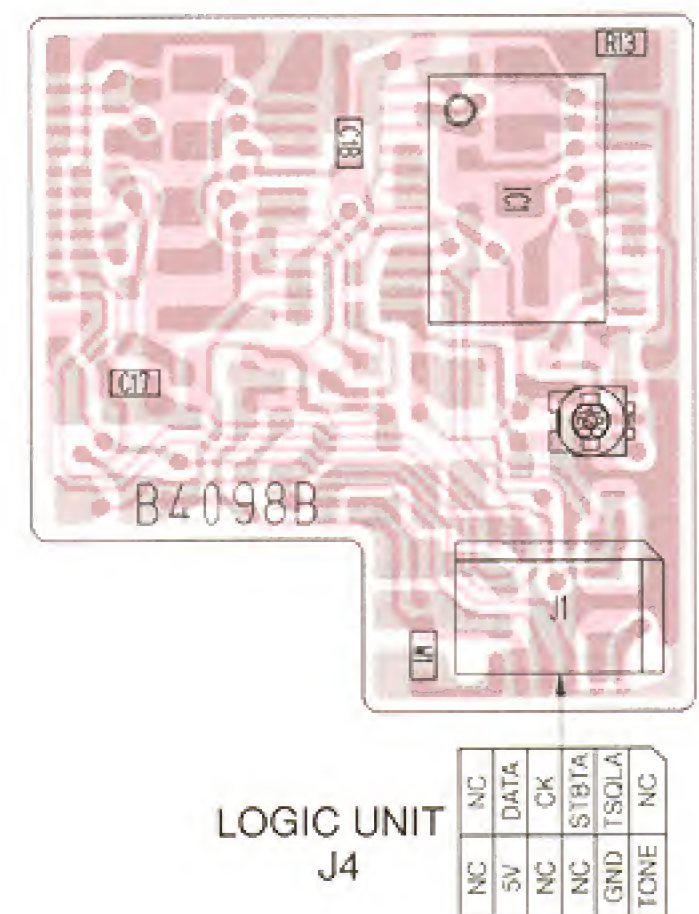
# • VR-A UNIT (TOP VIEW)



# • VR-B UNIT (TOP VIEW)



# • TONE UNIT (TOP VIEW) (U.S.A. and Korea only)

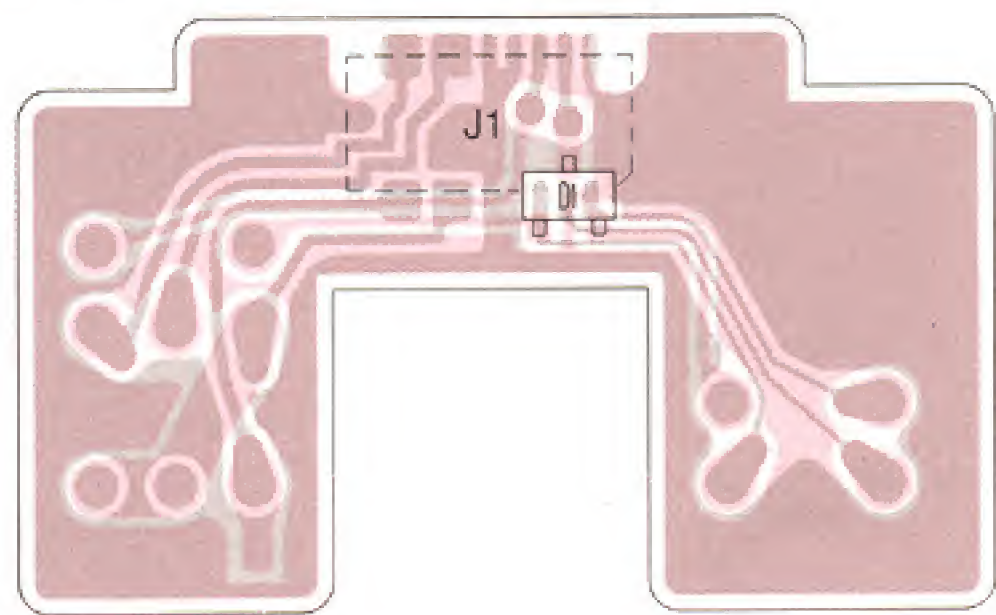


DISPLAY UNIT J2

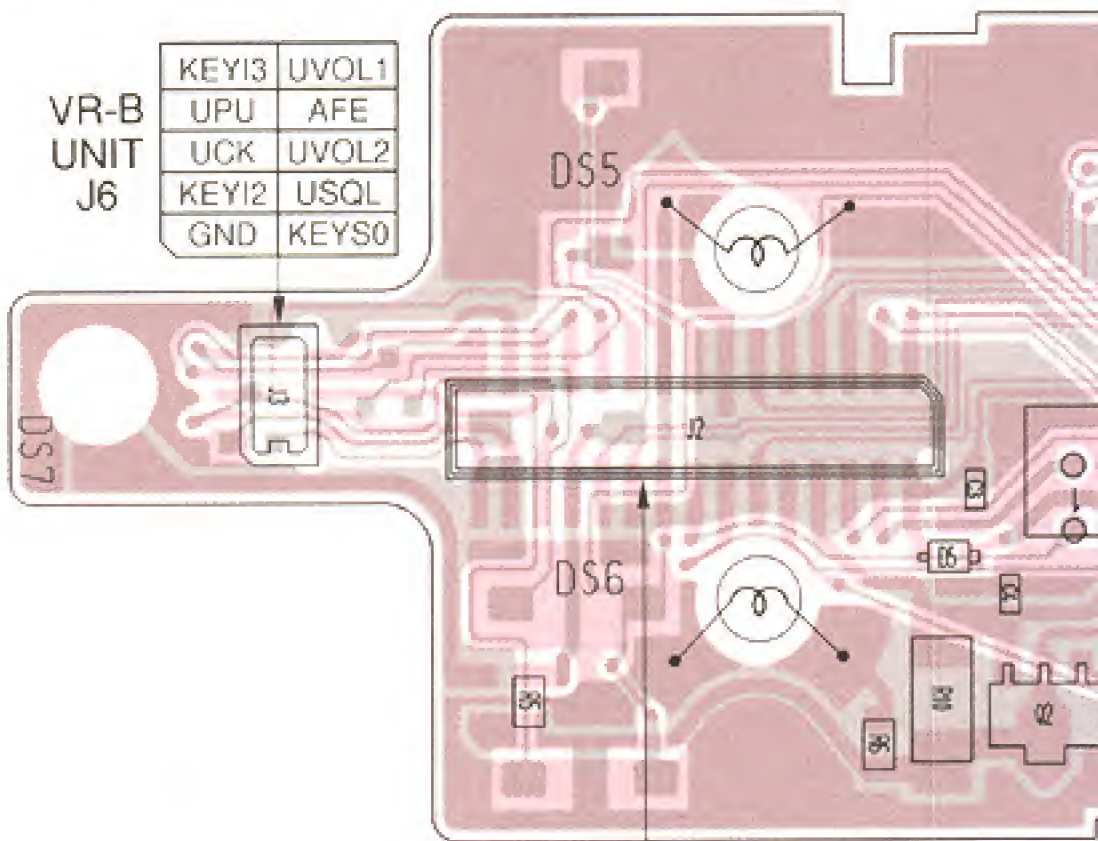
L5V	STBSP	VOICE	DATA	OK	LCCLK	DIM	LCE2	LCE1	/LINH	BUSY	GND	POWER	UNITS	KEYS1	KEY11	UPU	KEY10	KEY13	KEY12	USQL	UVOL1	KEYS0	AFE
-----	-------	-------	------	----	-------	-----	------	------	-------	------	-----	-------	-------	-------	-------	-----	-------	-------	-------	------	-------	-------	-----



• VR-A UNIT (BOTTOM VIEW)



• DISPLAY UNIT (BOTTOM VIEW)



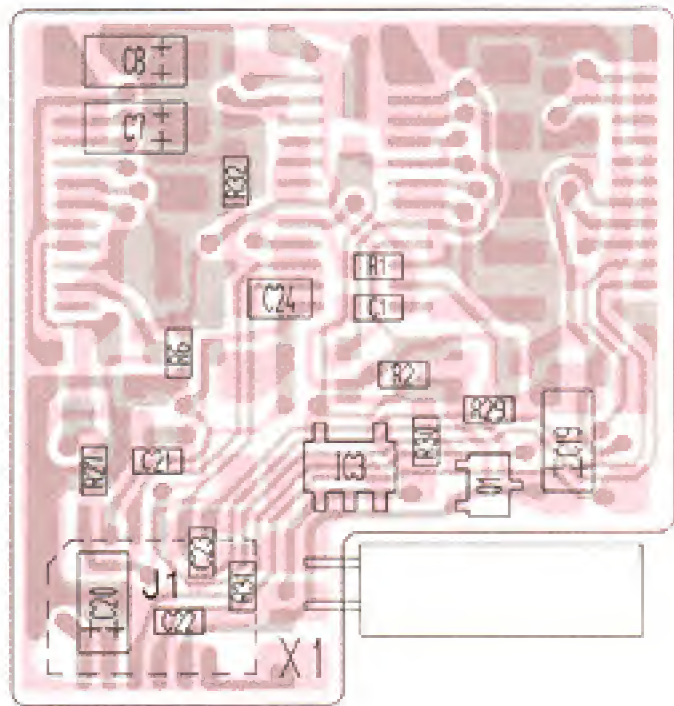
LOGIC UNIT J7

KEYS0	AFE
USQL	UVOL1
KEY12	UVOL2
KEYS2	KEY13
KEY10	UPU
KEY11	UCK
KEYS1	LOW
UNITS	POWER
BUSY	GND
LCE1	/LINH
DIM	LCE2
13.8V	LCCLK
CK	LCDATA
VOICE	DATA
L5V	STBSP

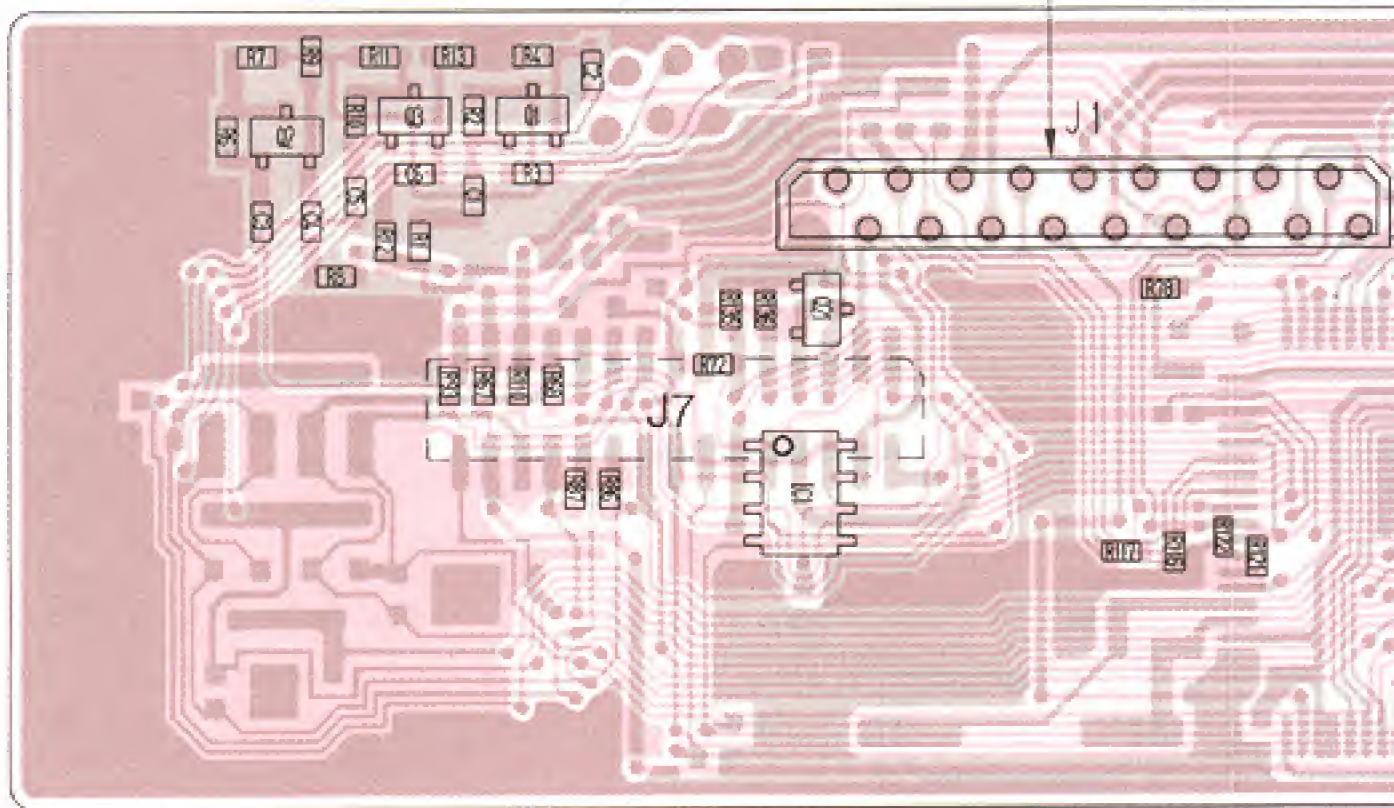
UNITS	VOICE
-------	-------

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• TONE UNIT (BOTTOM VIEW)  
(U.S.A. and Korea only)

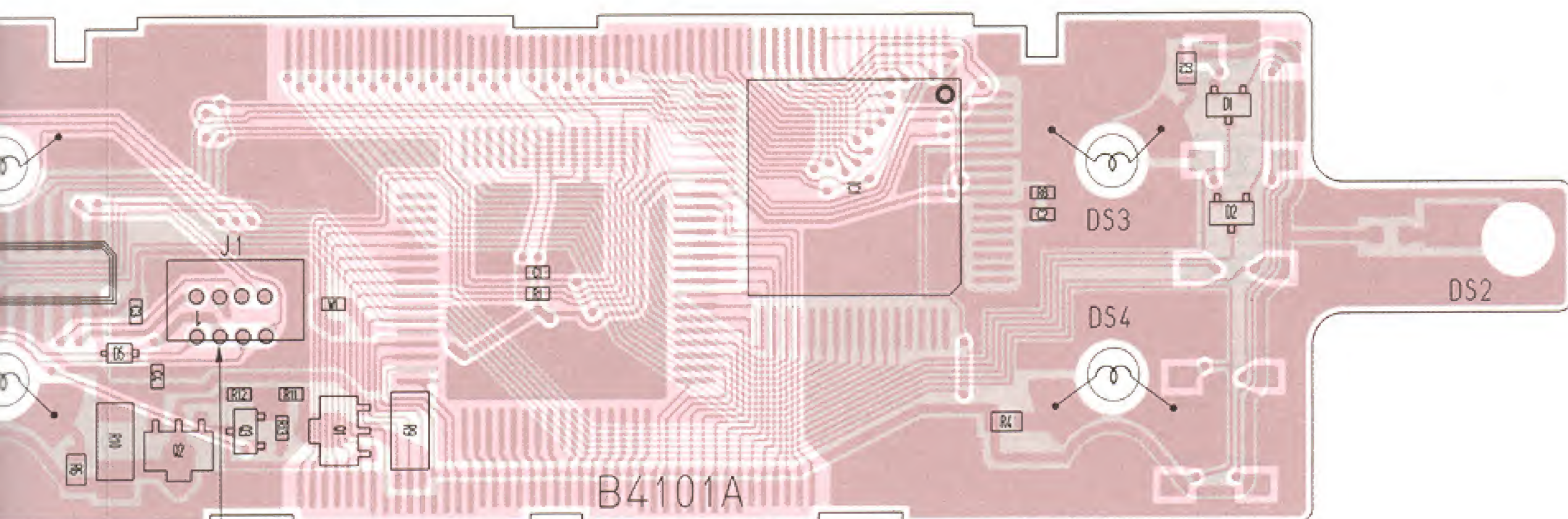


• LOGIC UNIT (BOTTOM VIEW)



E	CK
DATA	STBPLV
UNLK V	DET V
SQL V	SQLSV
SRFV	AFE
UVOL1	VVOL1
VVOL2	UVOL2
DTMF	VOICE
DET	STB VHF
STB COM	





DIM	LCE2
13.8V	LCCLK
CK	LCDATA
VOICE	DATA
L5V	STBSP

UNITS	VOICE
L5V	E
BUSY	CK
STBSP	DATA

VOICE  
SYNTHESIZER  
UNIT

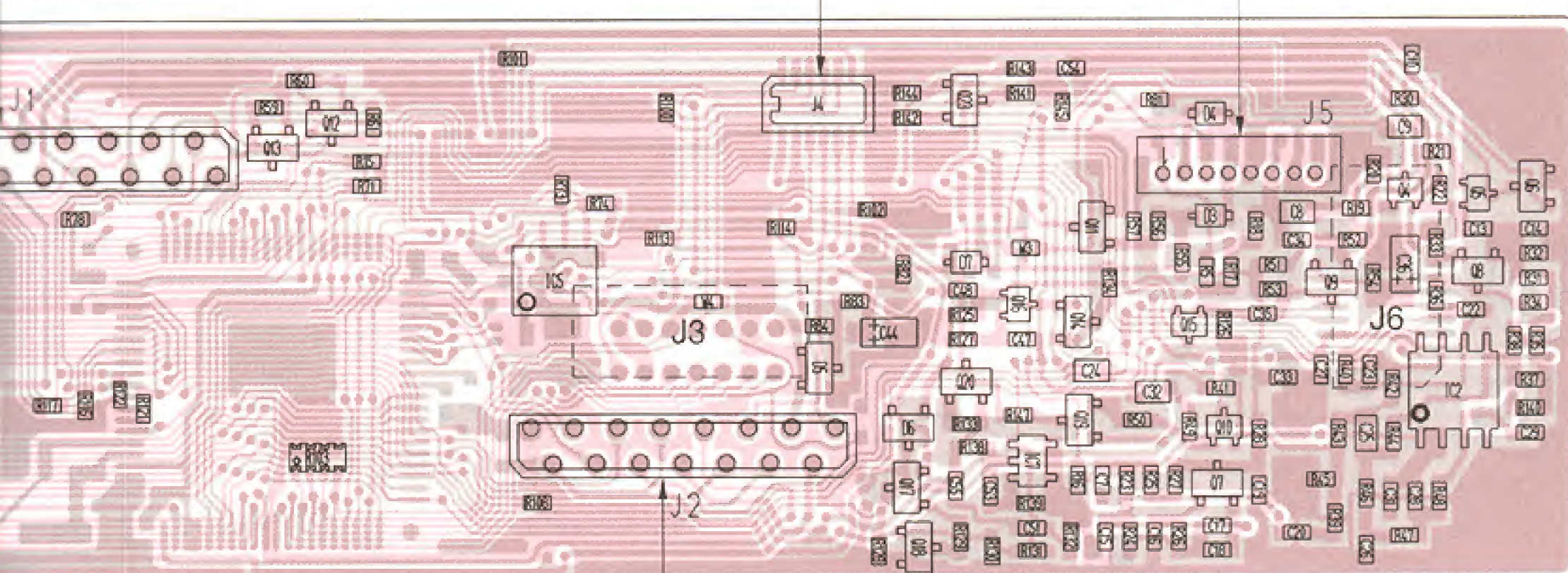
STB V	AFE
UVOL1	VVOL1
VVOL2	UVOL2
DTMF	VOICE
DET	STB VHF
STB COM	

MAIN-A  
UNIT  
J3

TONE	DETA
GND	TSQLA
STBTB	STBTA
DET B	CK
5V	DATA
UNIT T	TSQLB

TONE UNIT  
(OPTION)

MBV	MU/D	OUT	PTT	MICE	MIC	E	NC	MIC UNIT
-----	------	-----	-----	------	-----	---	----	----------

MIC  
UNIT

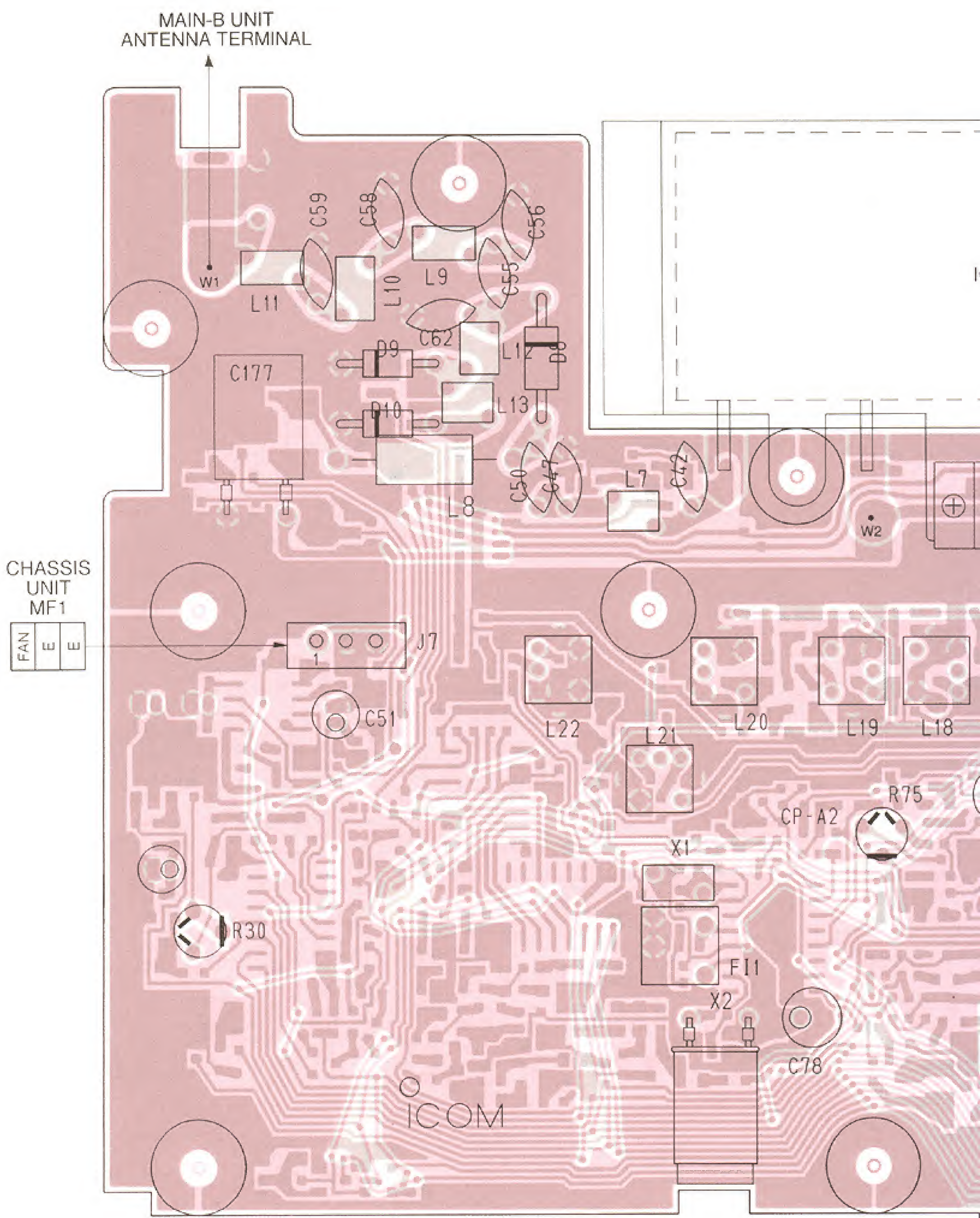
+5V	E
DATA	CK
MOD	STB PLU
+8V	UNLK U
STB UHF	SRFU
SQLS U	DETU
SQLU	13.8V
	POWER

MAIN-B  
UNIT  
J2



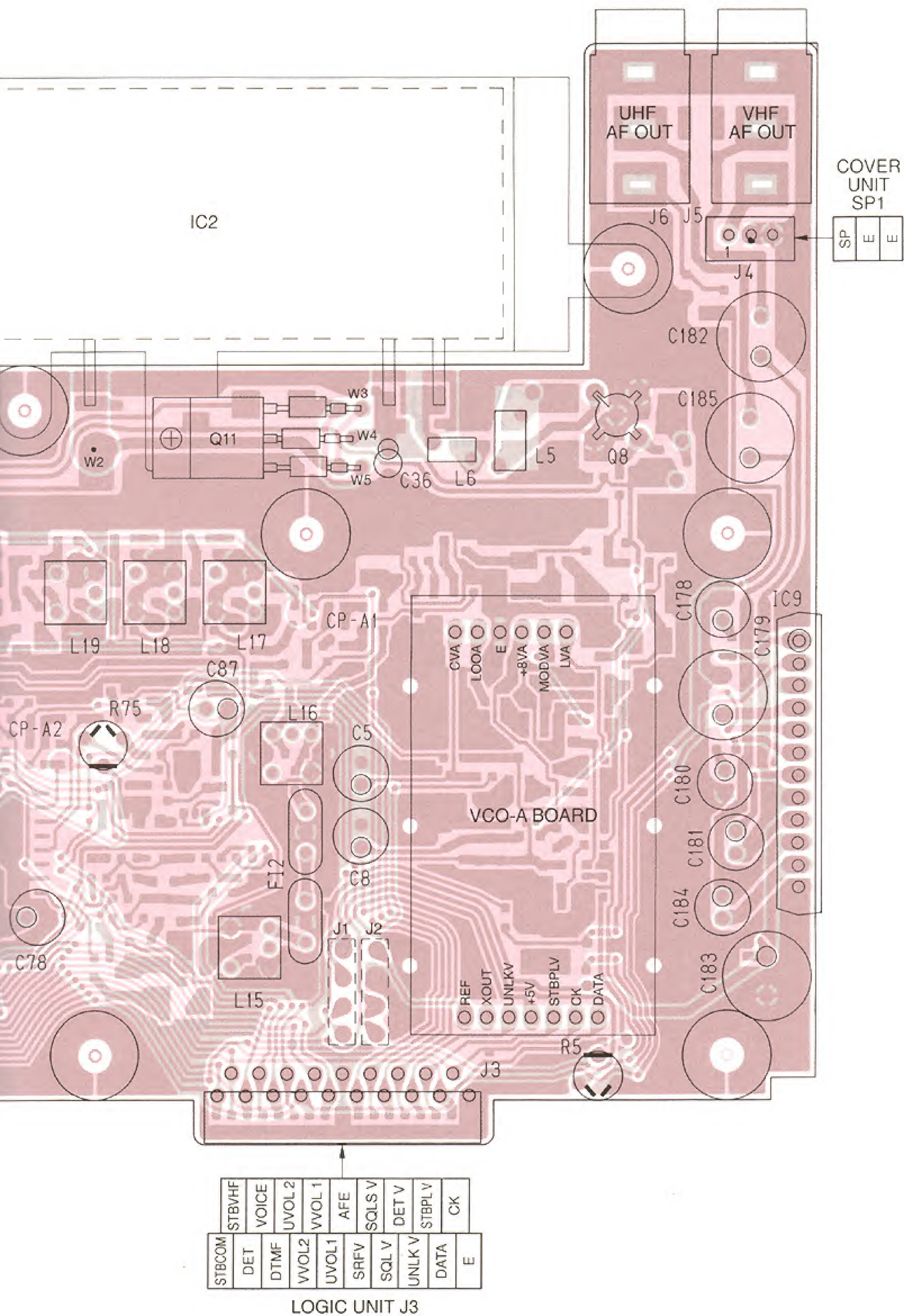
# 8-2 MAIN-A UNIT

## • MAIN-A UNIT (TOP VIEW)





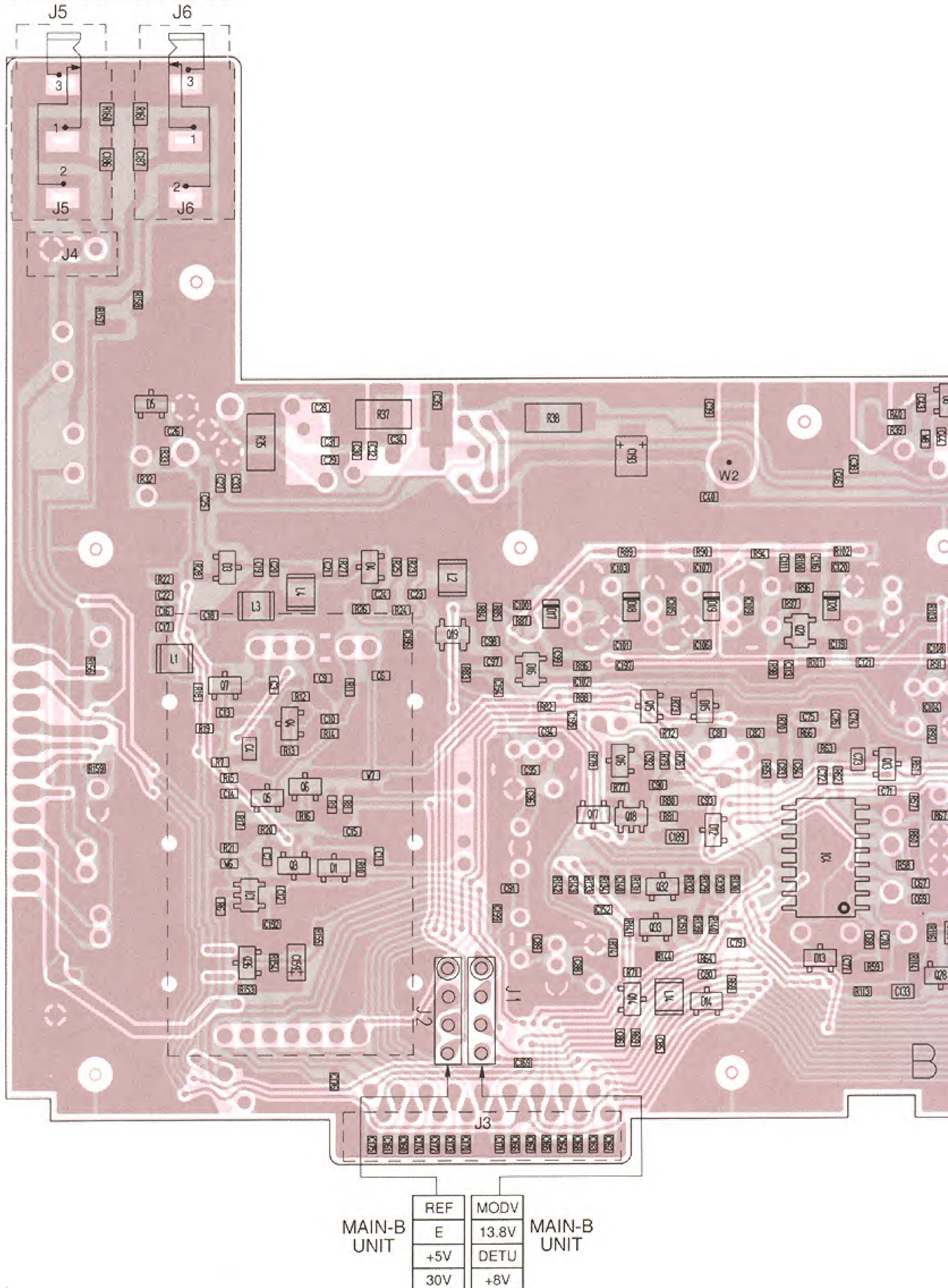
The combination of this page and the next page shows the unit layout in the same configuration as the actual P.C. Board.





• MAIN-A UNIT (BOTTOM VIEW)

VHF AF OUT UHF AF OUT





1

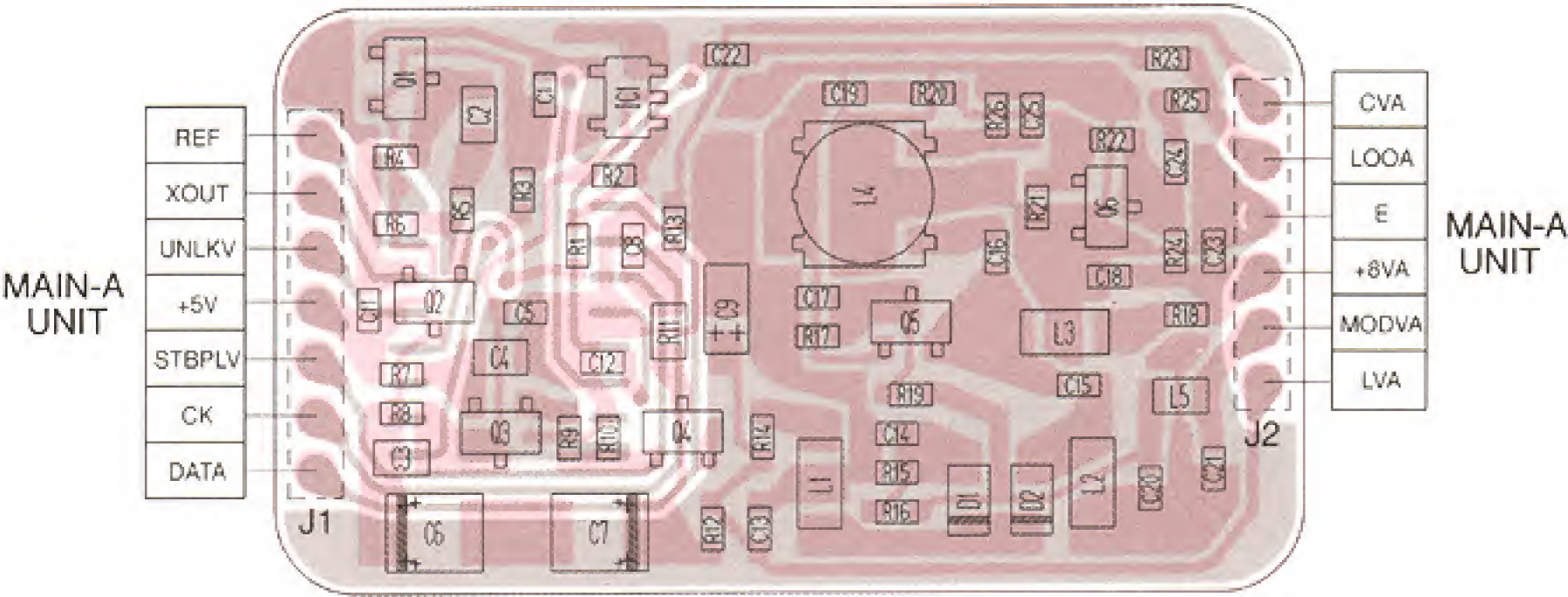


-8-

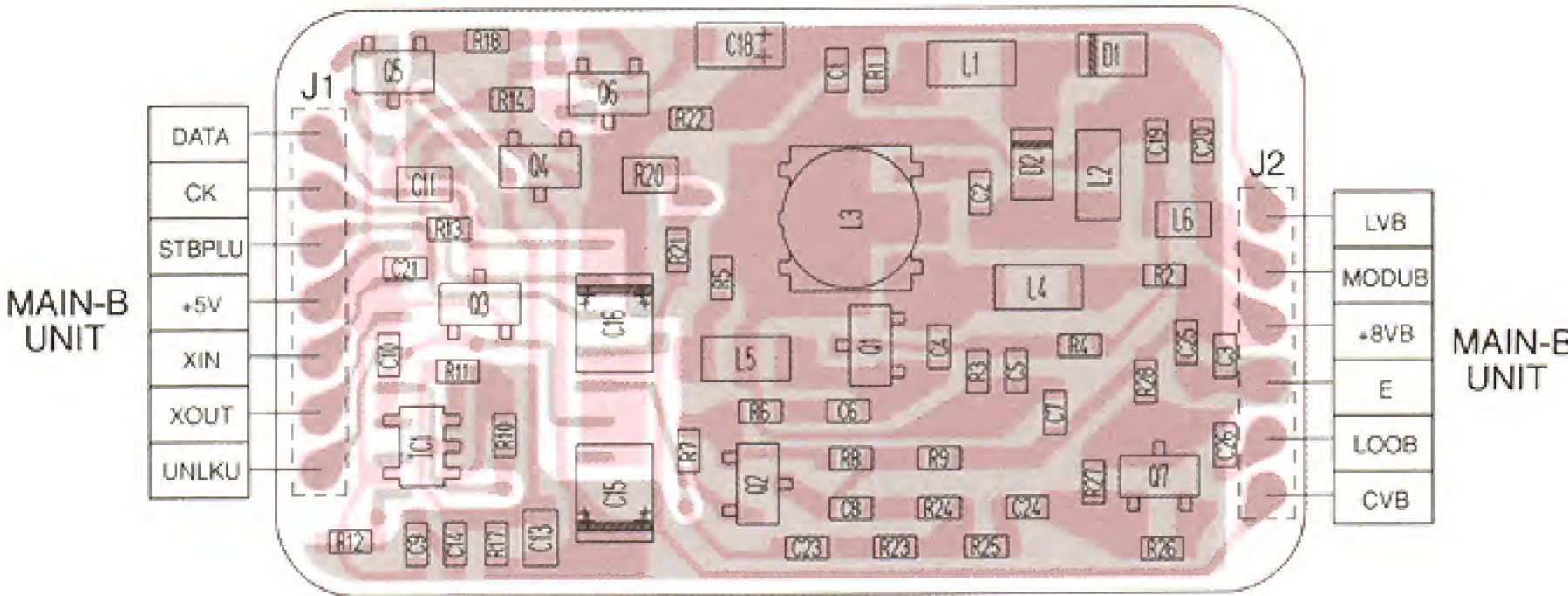


The combination of this page and the next page shows the unit layout in the same configuration as the actual P.C. Board.

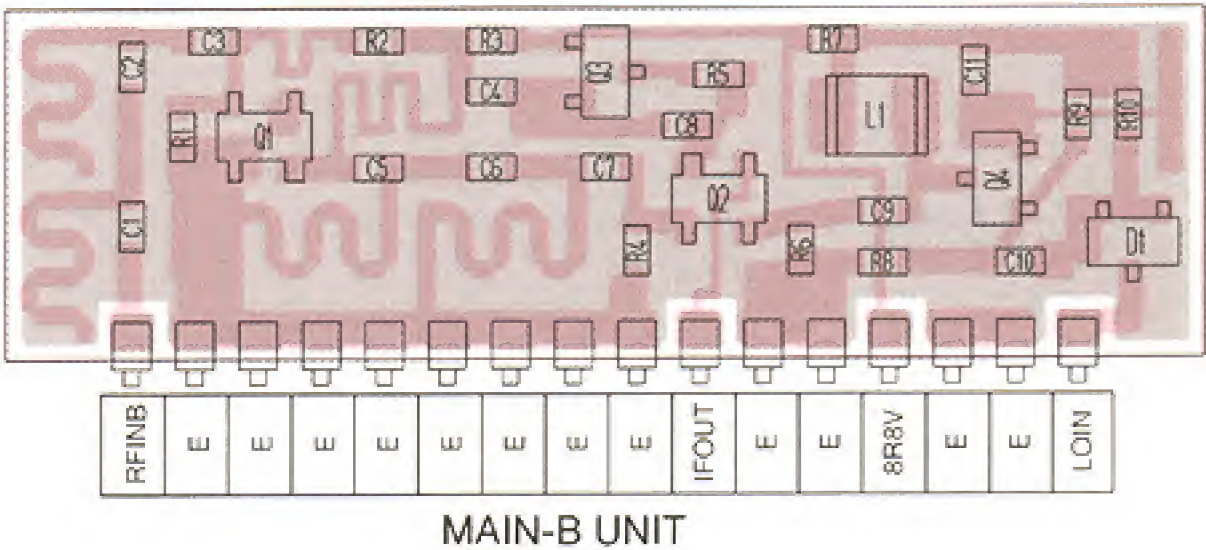
• VCO-A BOARD (TOP VIEW)



• VCO-B BOARD (TOP VIEW)

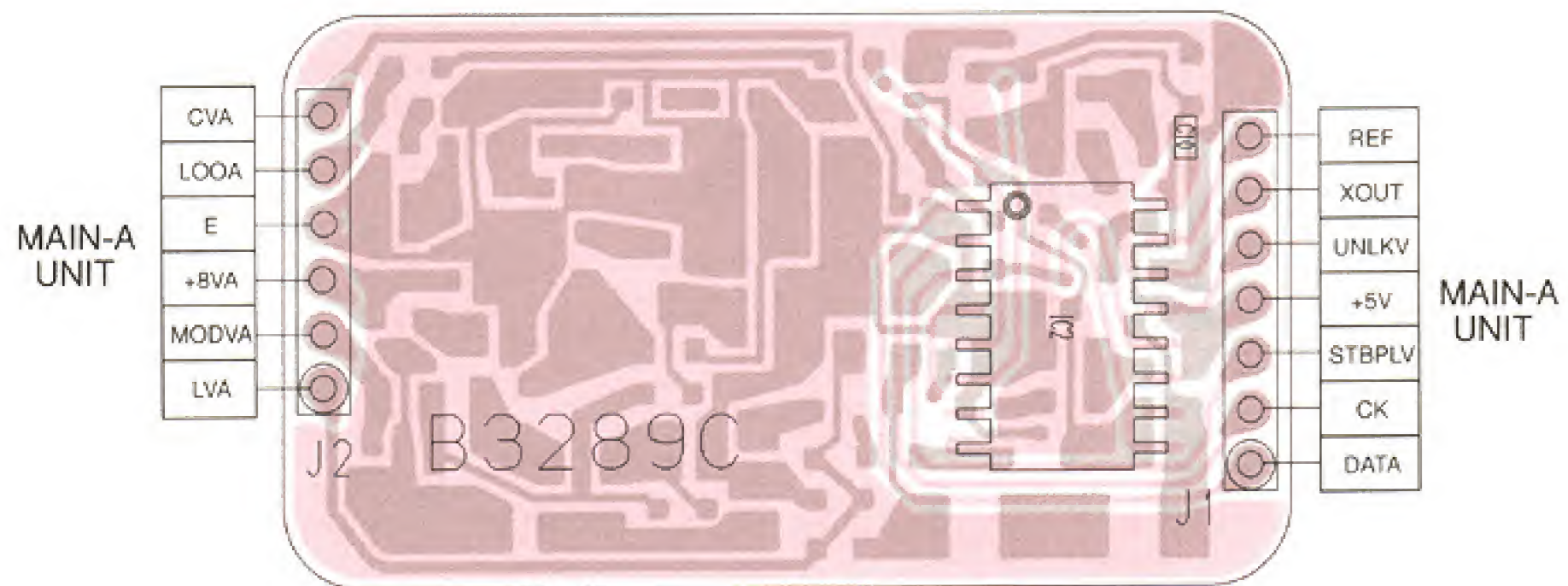


• B-BAND UNIT (TOP VIEW)

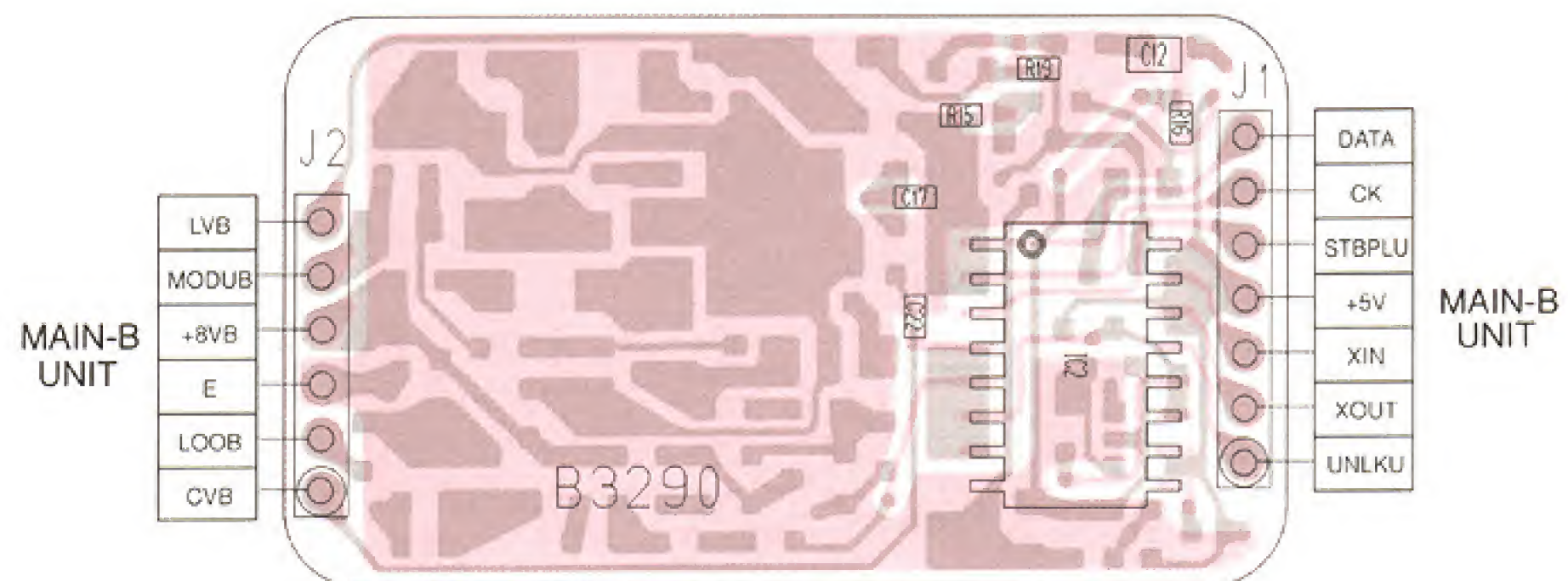




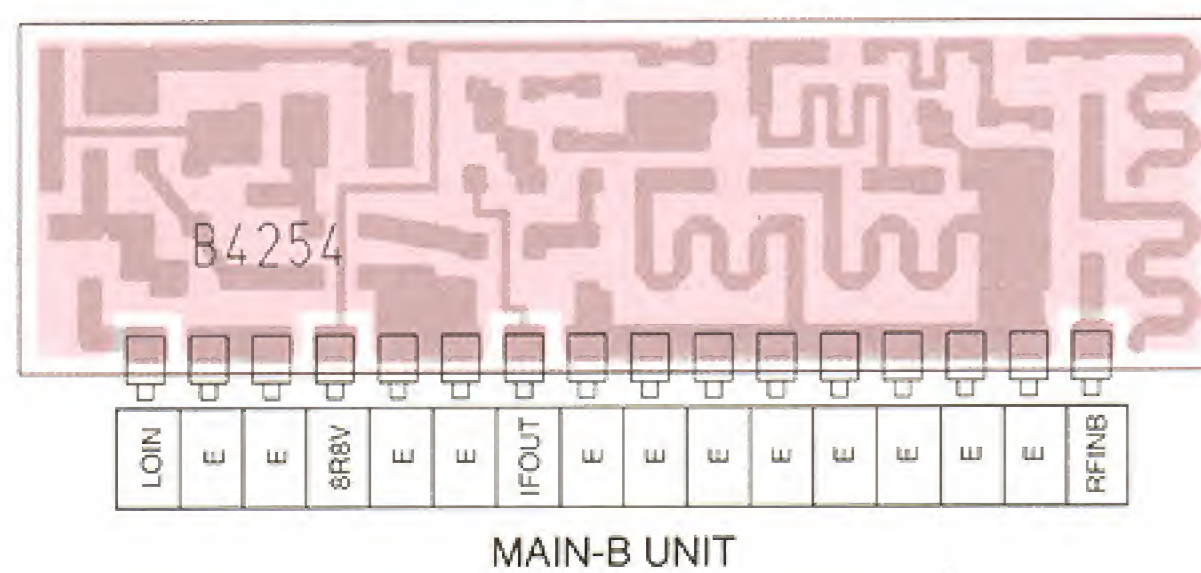
• VCO-A BOARD (BOTTOM VIEW)



• VCO-B BOARD (BOTTOM VIEW)



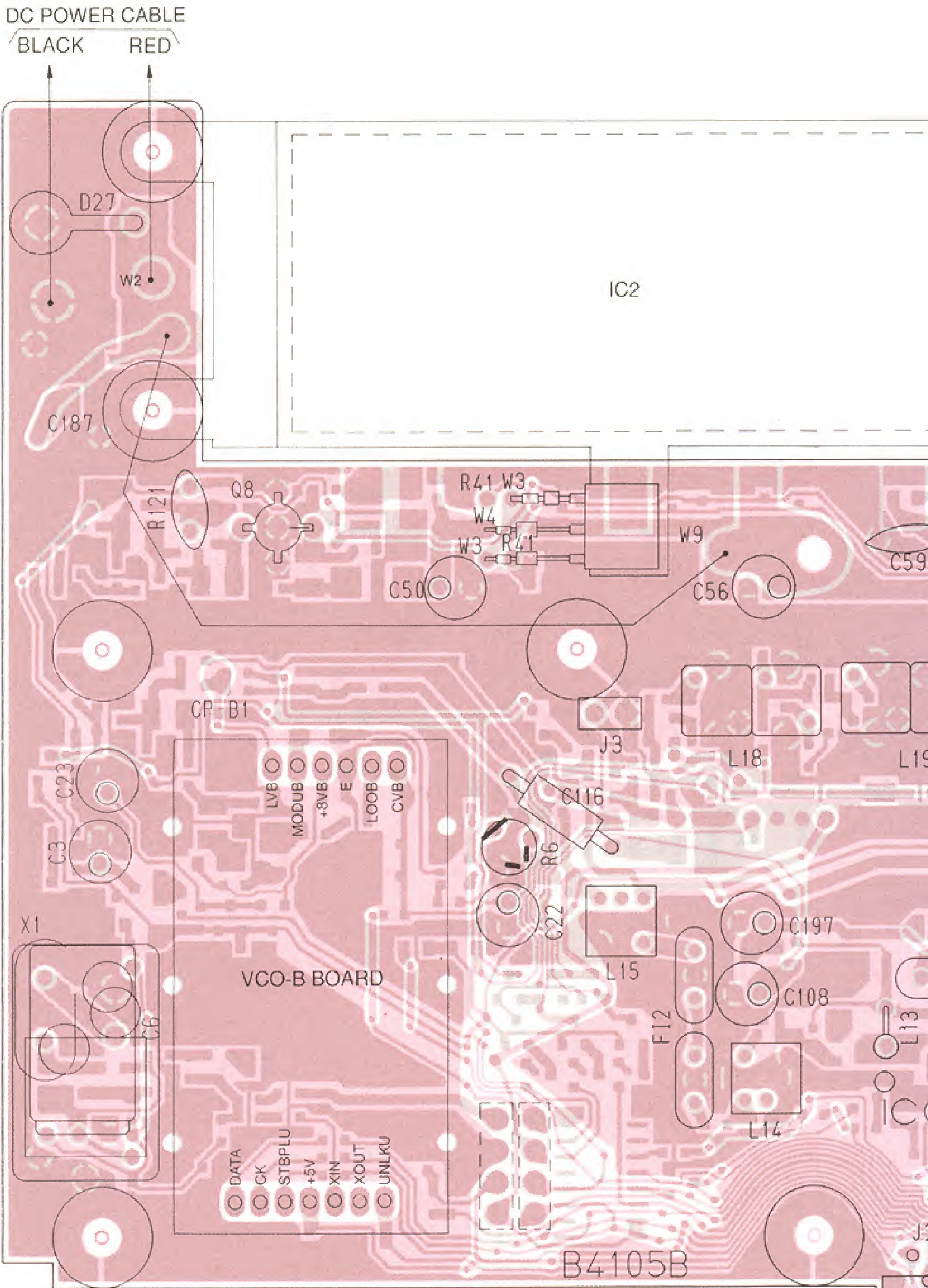
• B-BAND UNIT (BOTTOM VIEW)





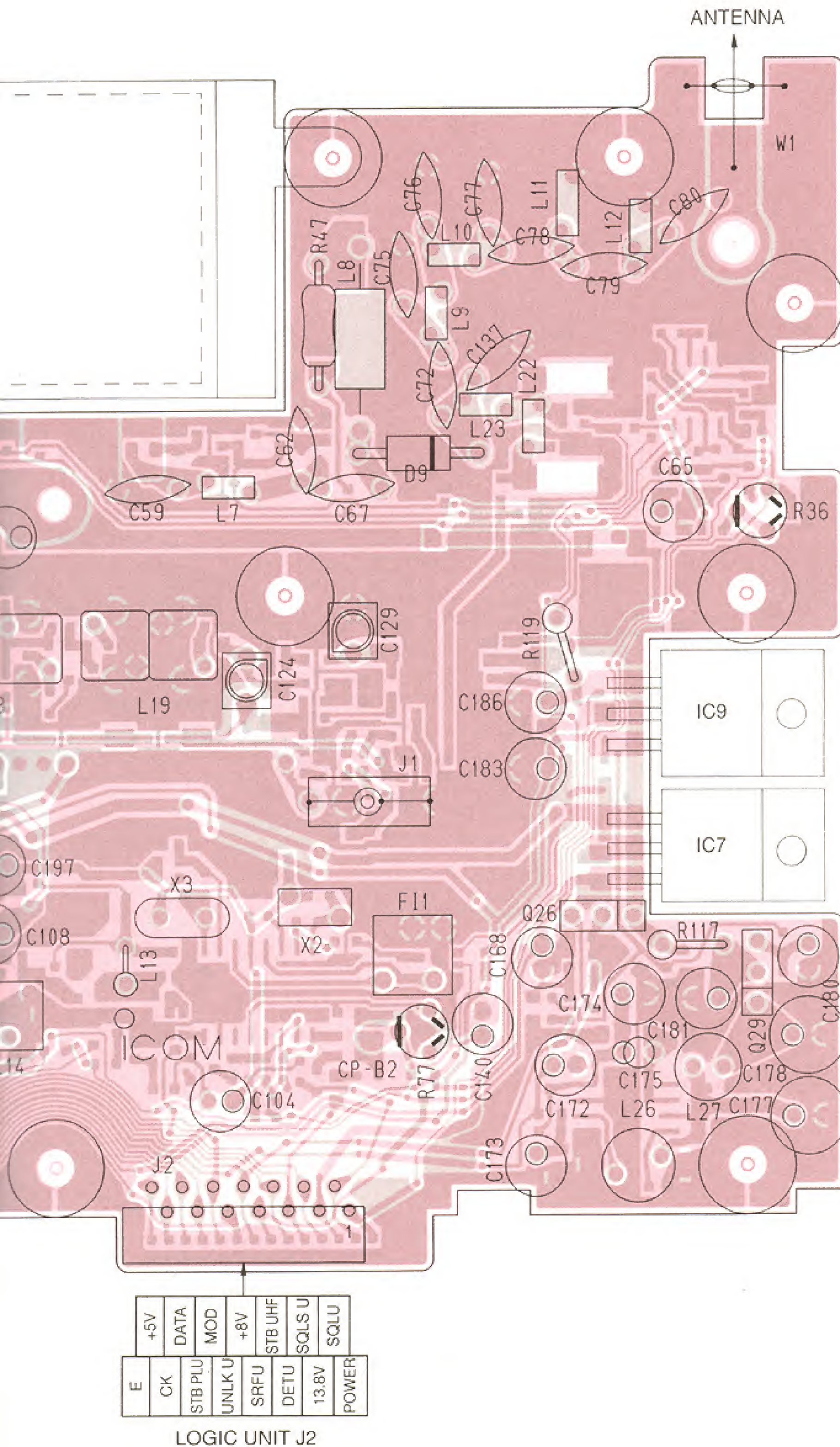
8-3 MAIN-B UNIT

• MAIN-B UNIT (TOP VIEW)



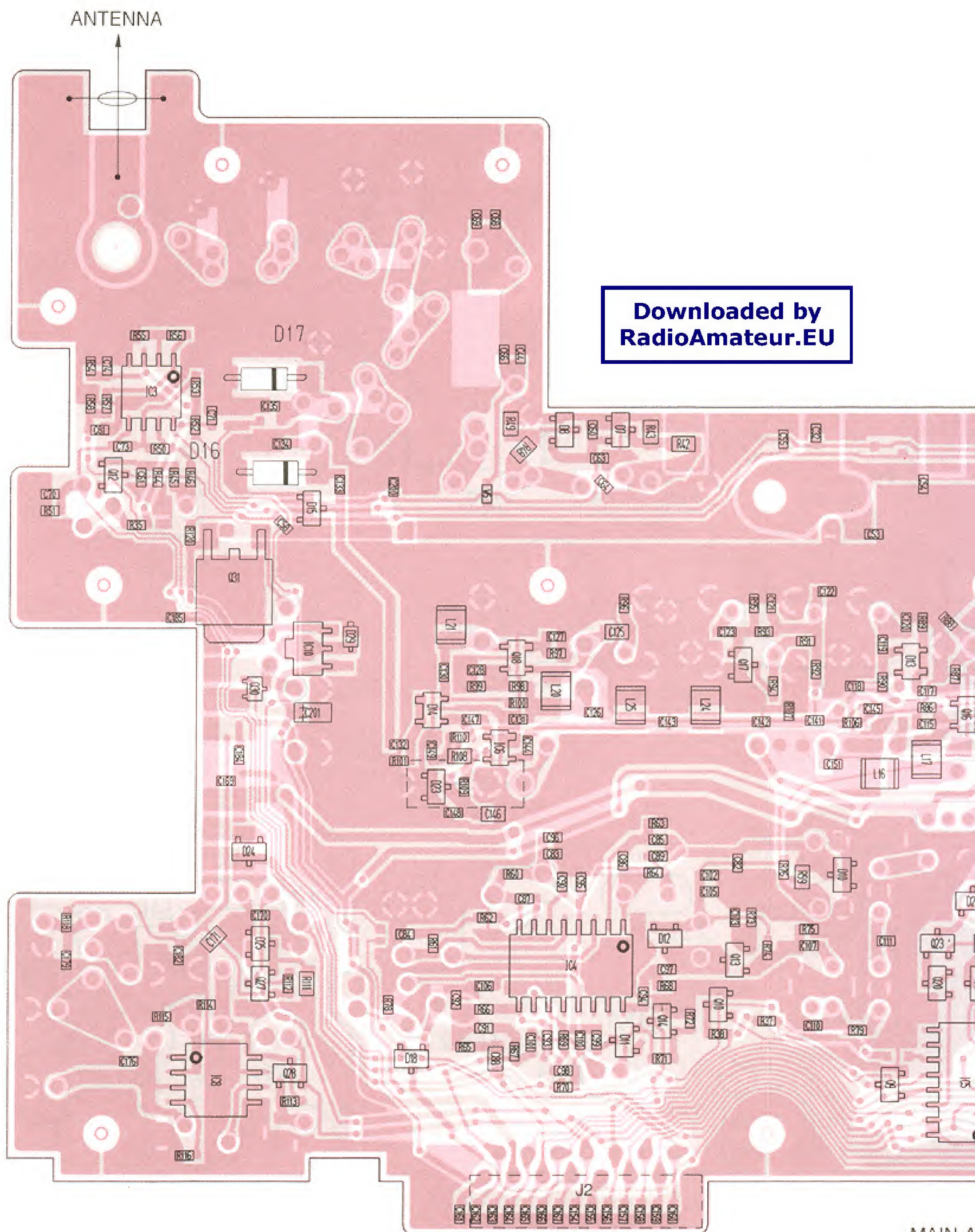


The combination of this page and the next page shows the unit layout in the same configuration as the actual P.C. Board.





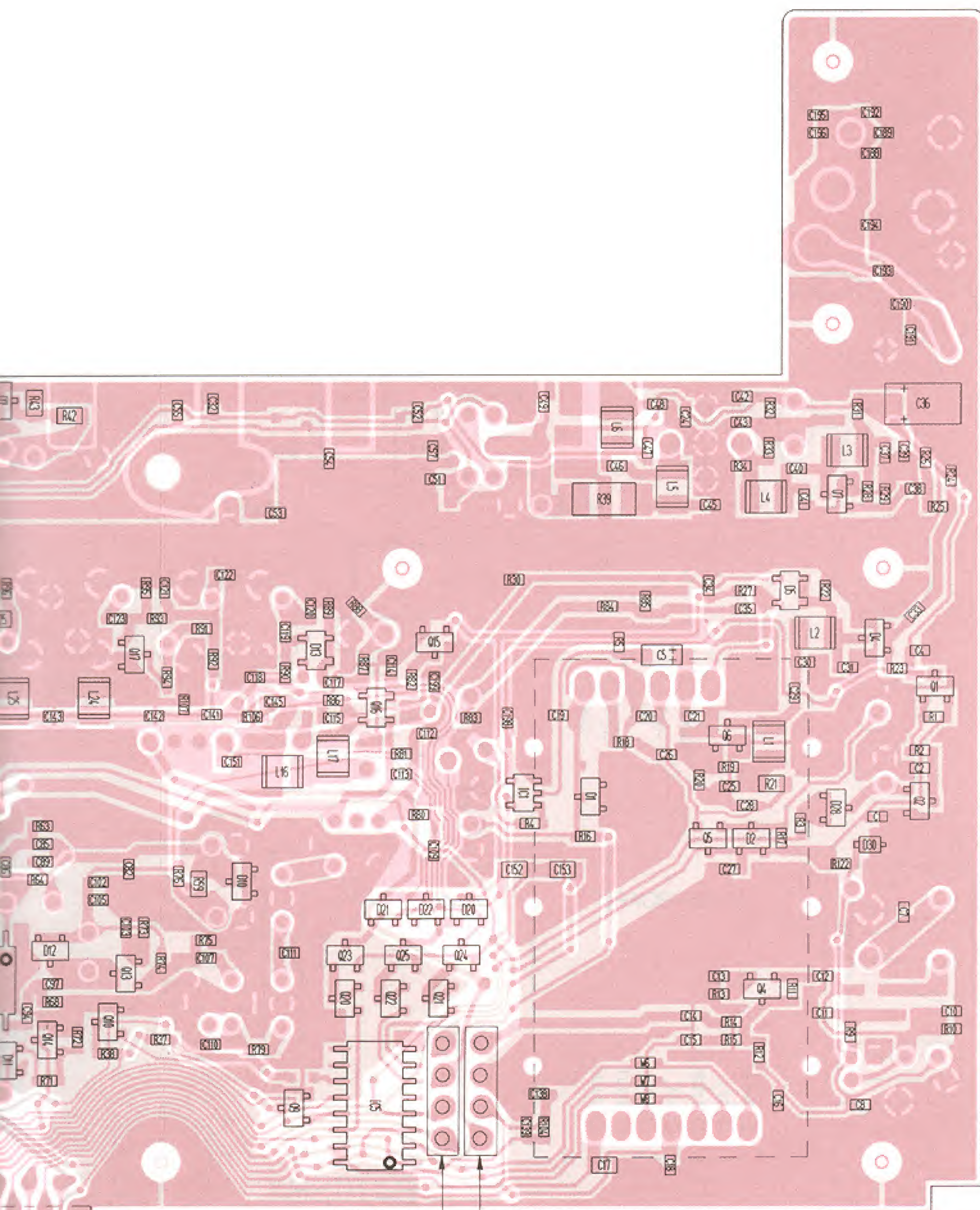
• MAIN-B UNIT (BOTTOM VIEW)



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MAIN-A  
UNIT  
J1



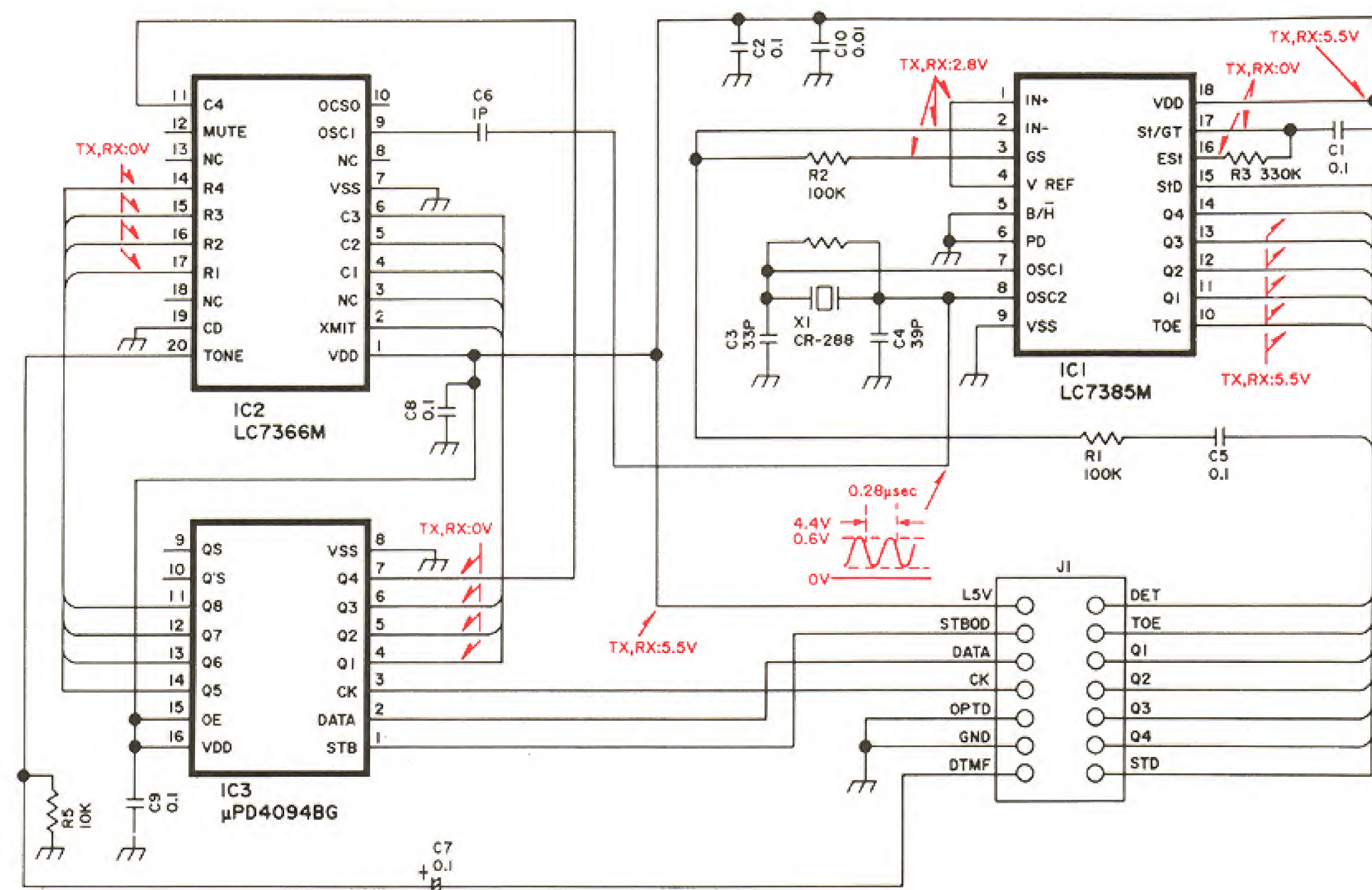


MAIN-A UNIT J1	MODV	REF	MAIN-A UNIT J2
	13.8V	E	
	DETU	+5V	
	+8V	30V	

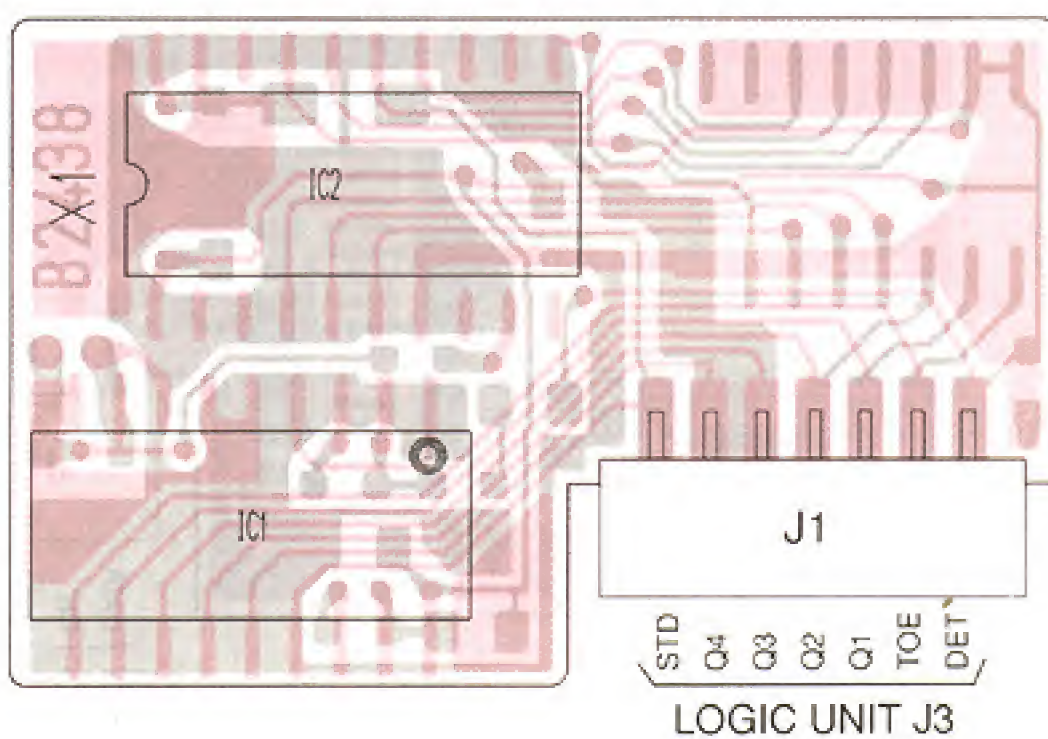


## SECTION 9    OPTIONAL UNITS

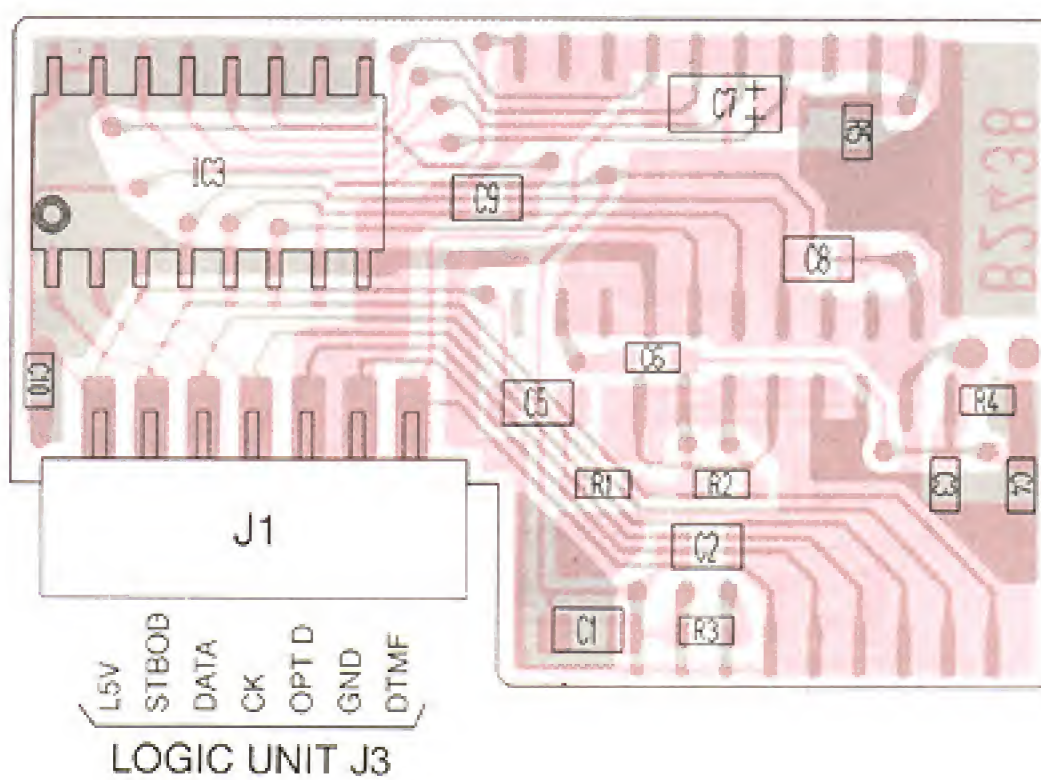
## 9-1 UT-55 DTMF ENCODER/DECODER UNIT



- BOARD LAYOUT (TOP VIEW)

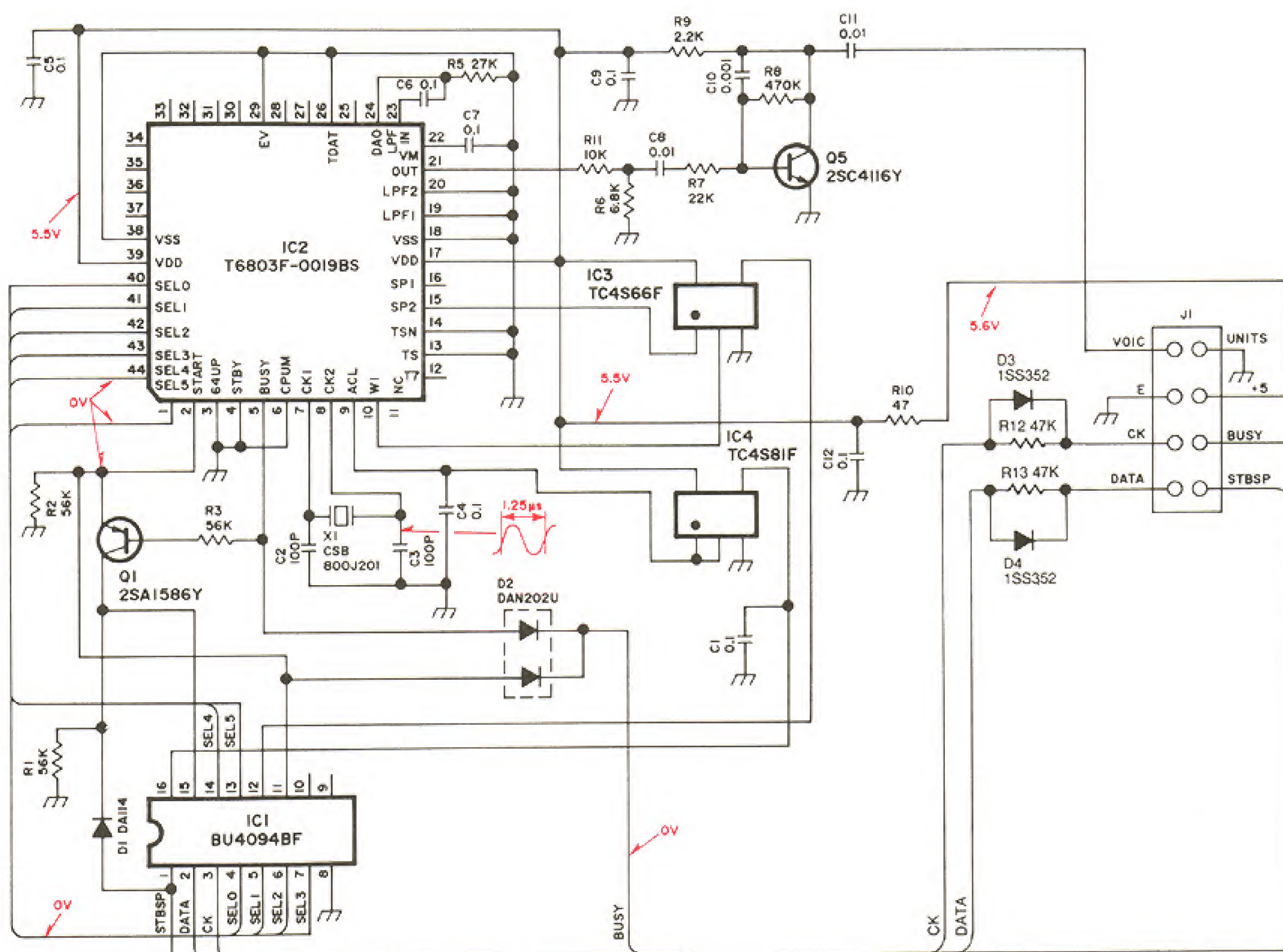


### • BOARD LAYOUT (BOTTOM VIEW)

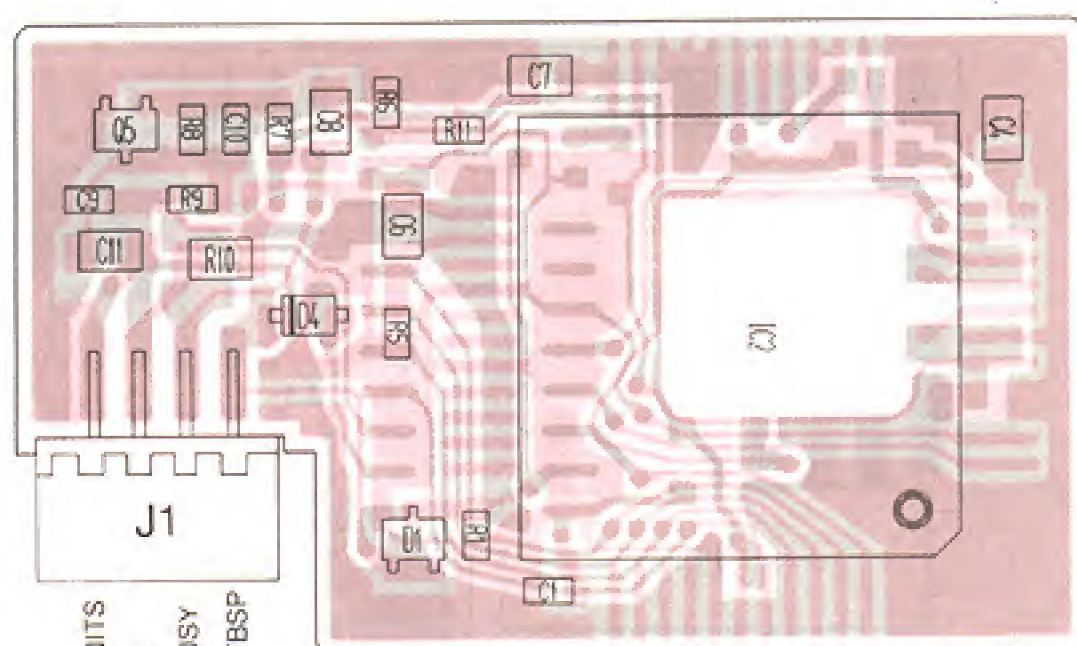




## 9-2 UT-66 VOICE SYNTHESIZER UNIT

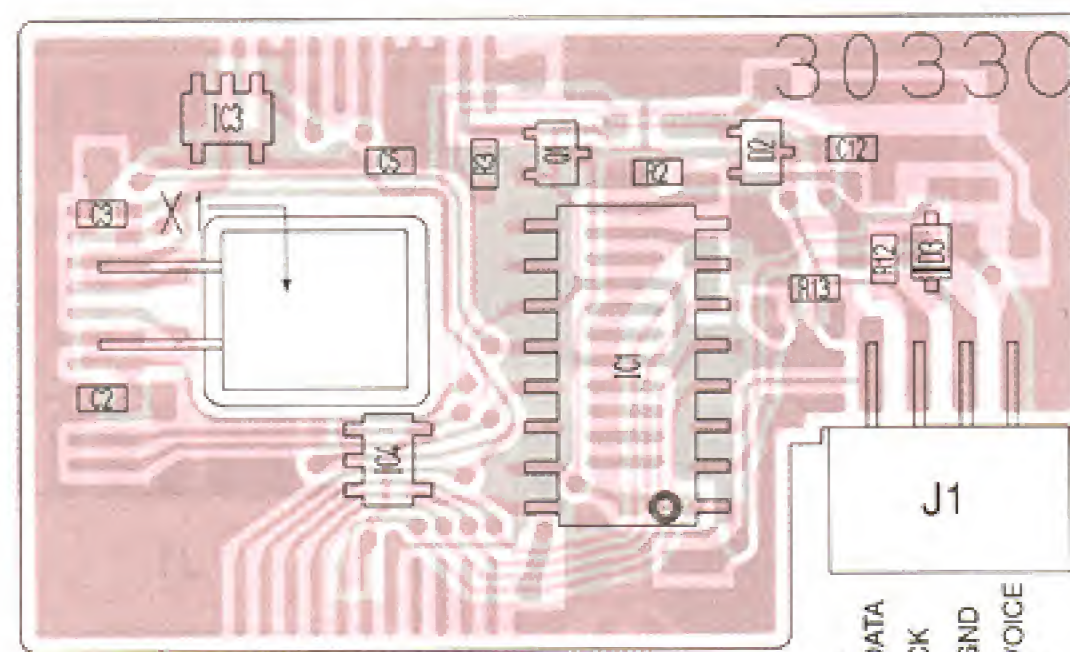


### • BOARD LAYOUT (TOP VIEW)



LOGIC UNIT J2

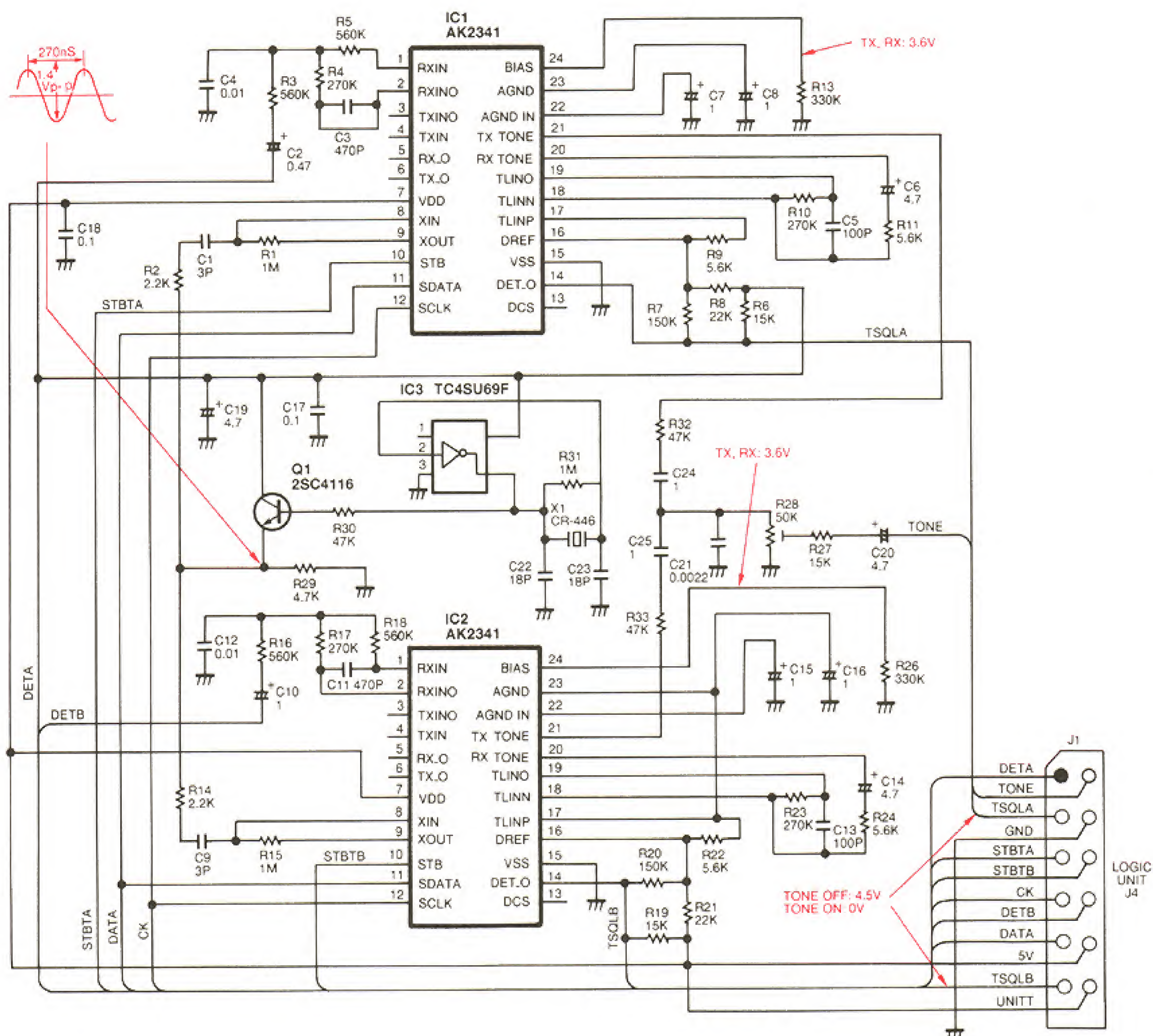
### • BOARD LAYOUT (BOTTOM VIEW)



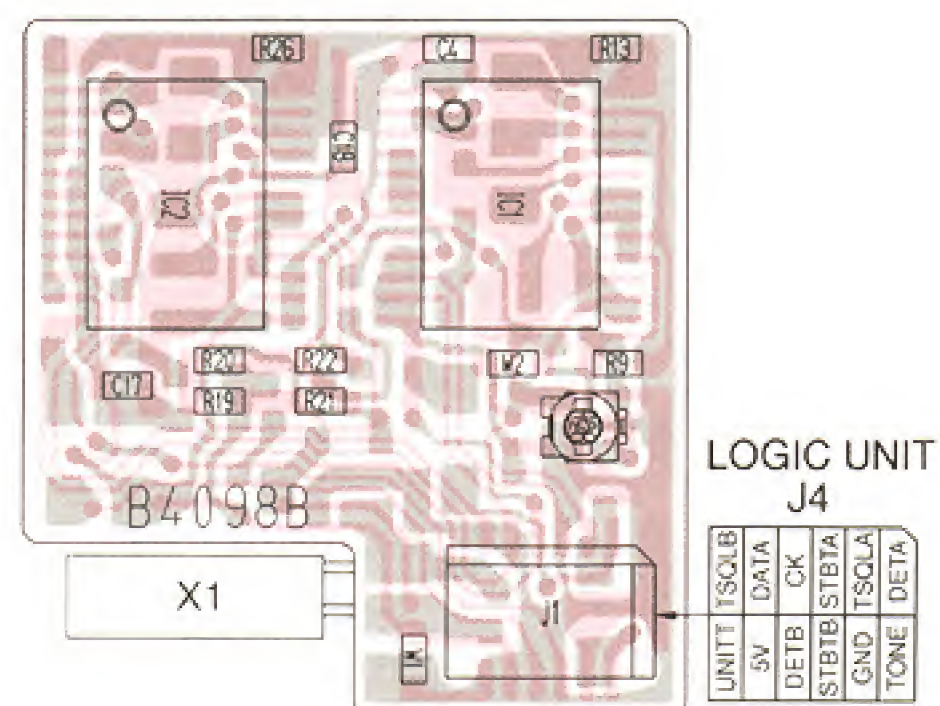
LOGIC UNIT J2



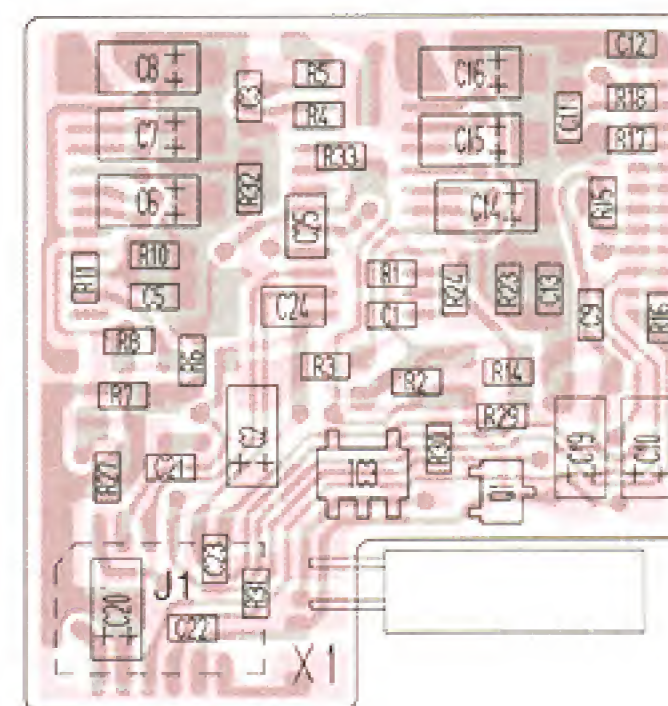
## 9-3 UT-89 TONE SQUELCH UNIT



### • BOARD LAYOUT (TOP VIEW)



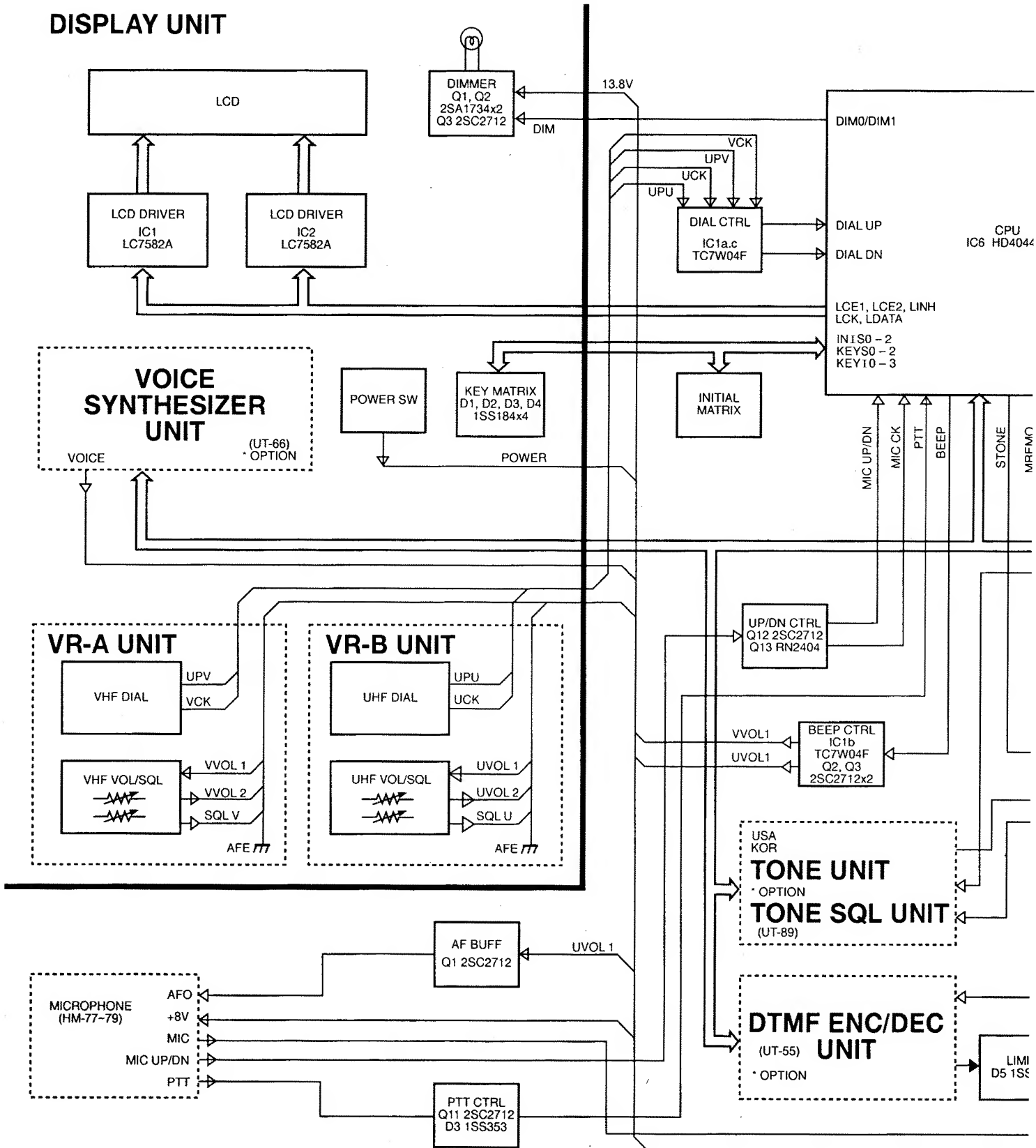
### • BOARD LAYOUT (BOTTOM VIEW)



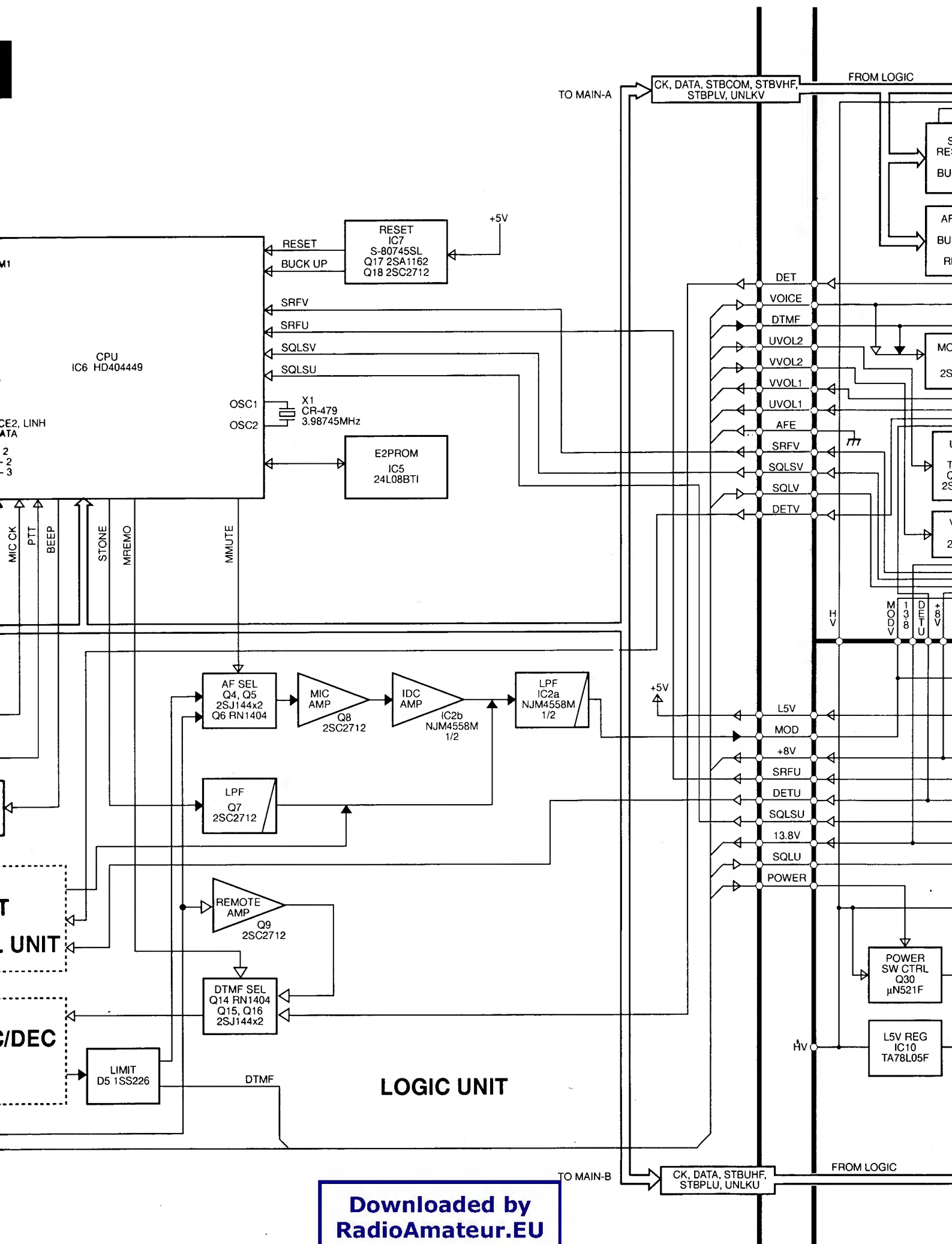


# SECTION 10 BLOCK DIAGRAM

## DISPLAY UNIT

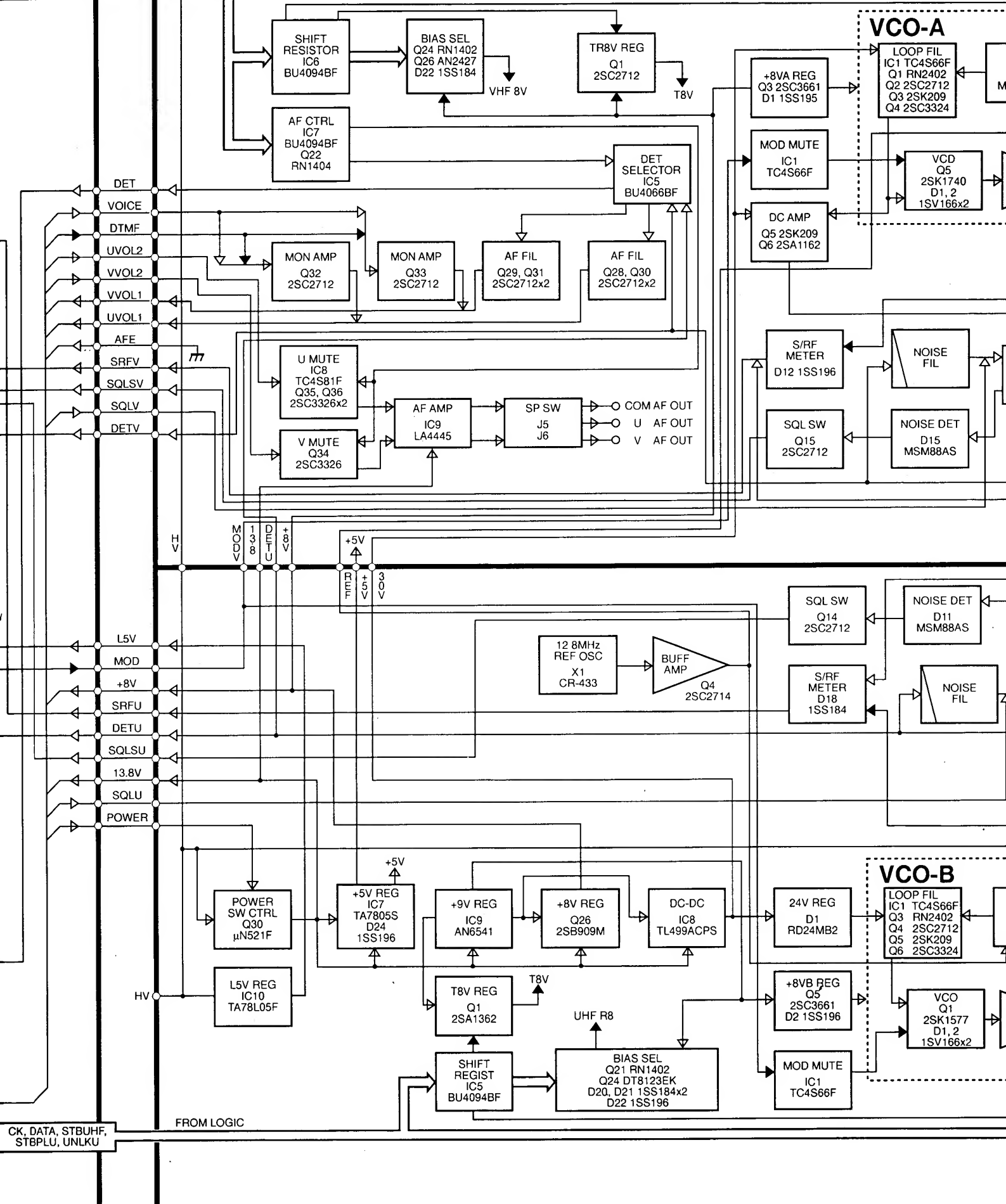


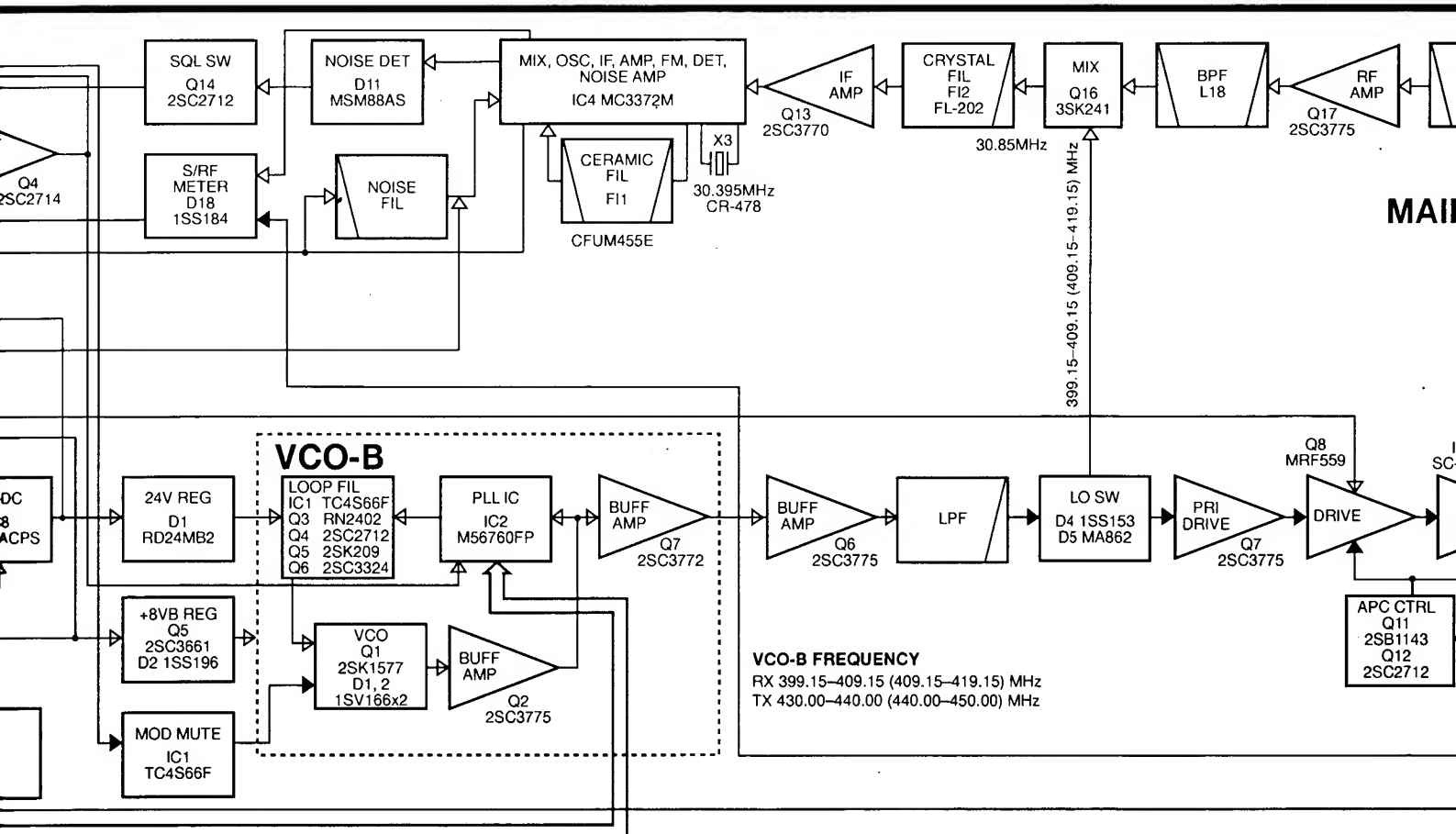
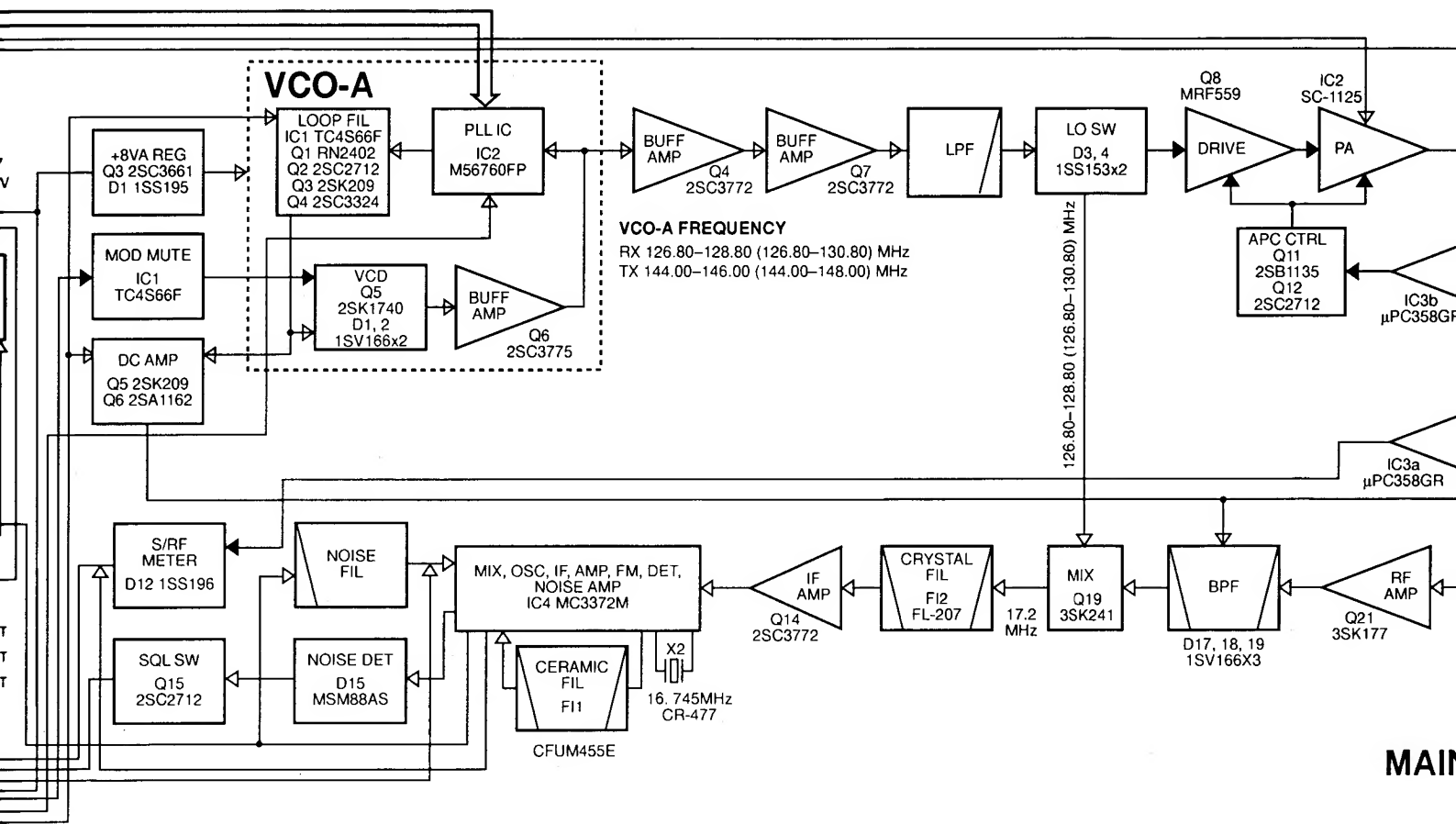




DATA, STBCOM, STBVHF,  
STBPLV, UNLKV

FROM LOGIC





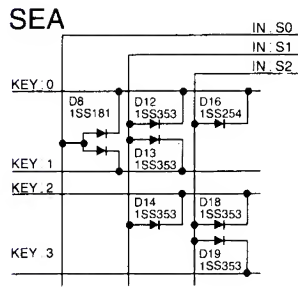
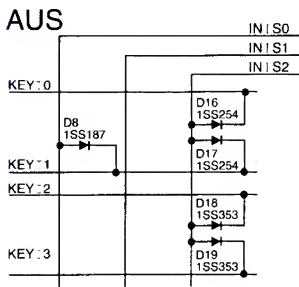
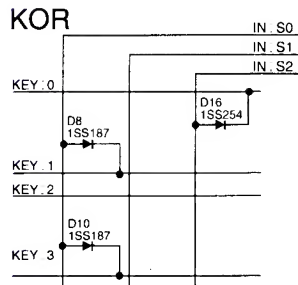
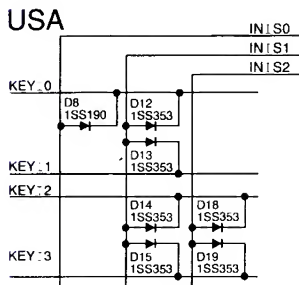
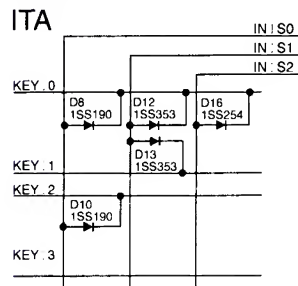
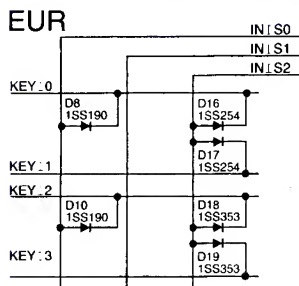


# SECTION 11 VOLTAGE DIAGRAM

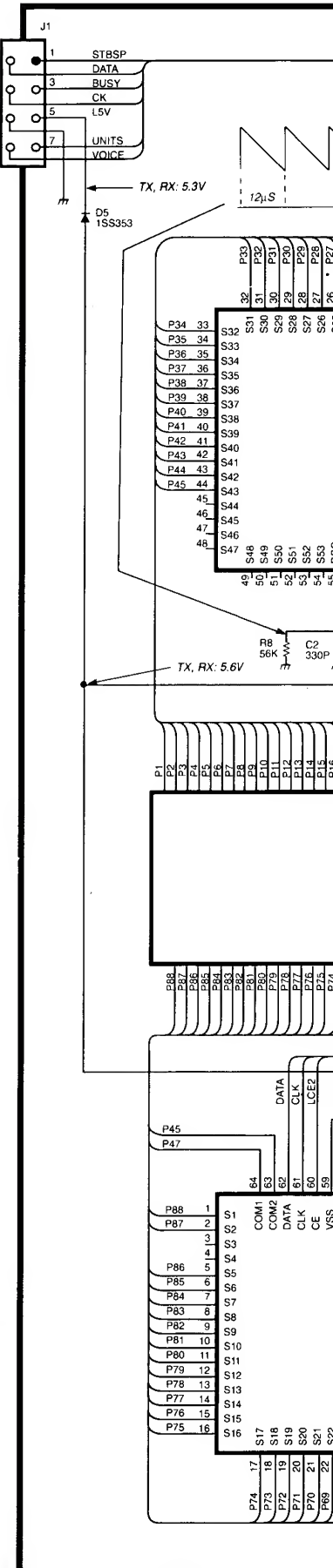
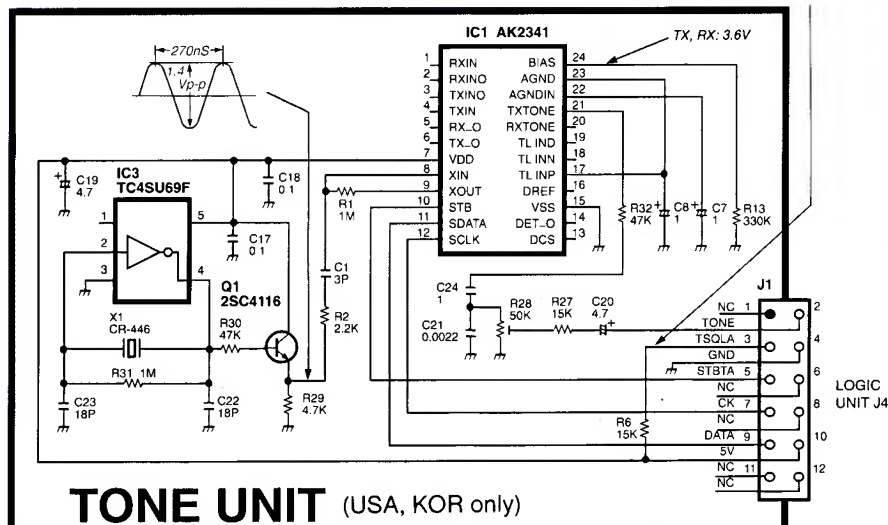
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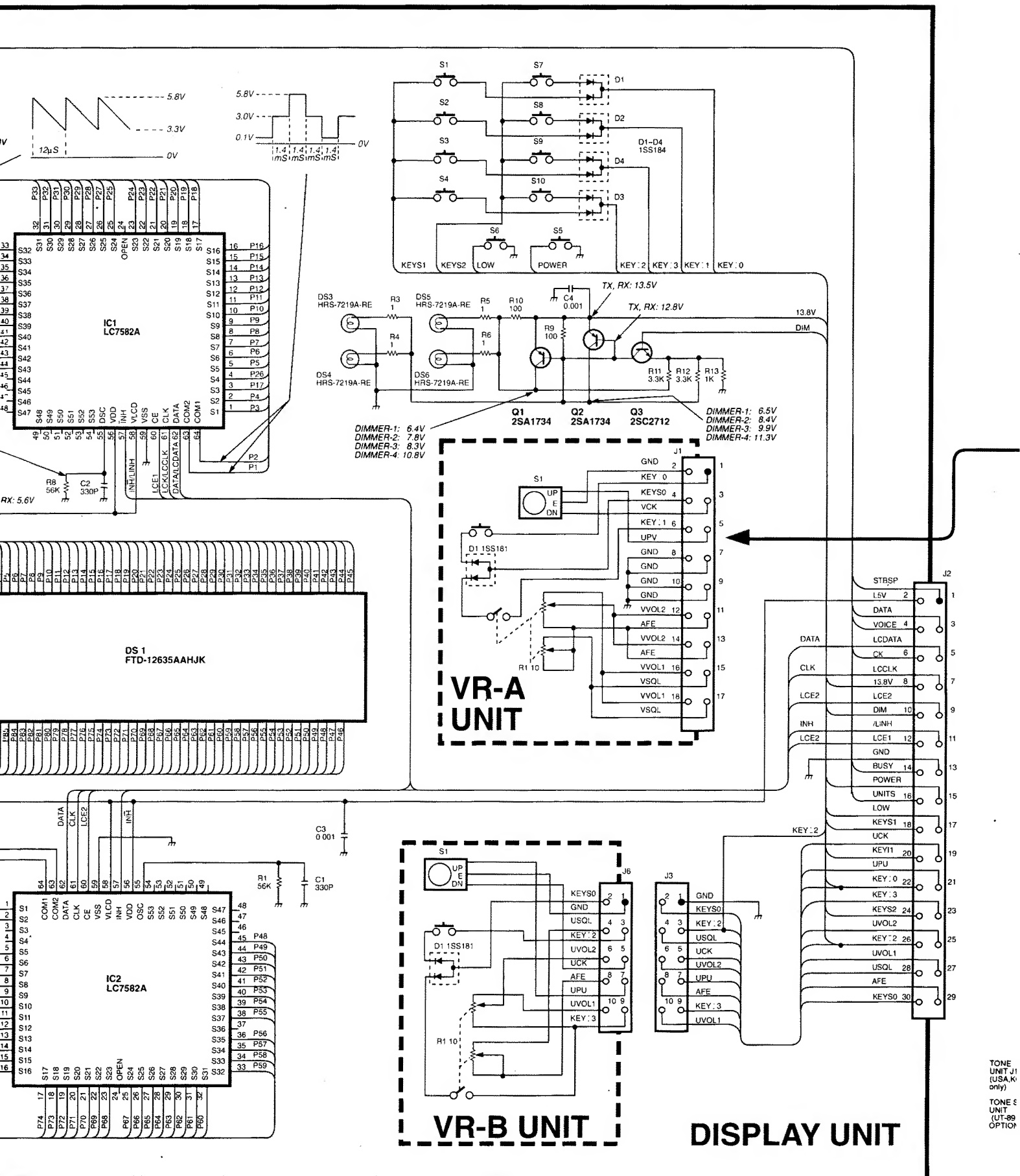
## VOICE SYNTHESIZER UNIT (OPTION)

### INITIAL MATRIX (LOGIC unit)



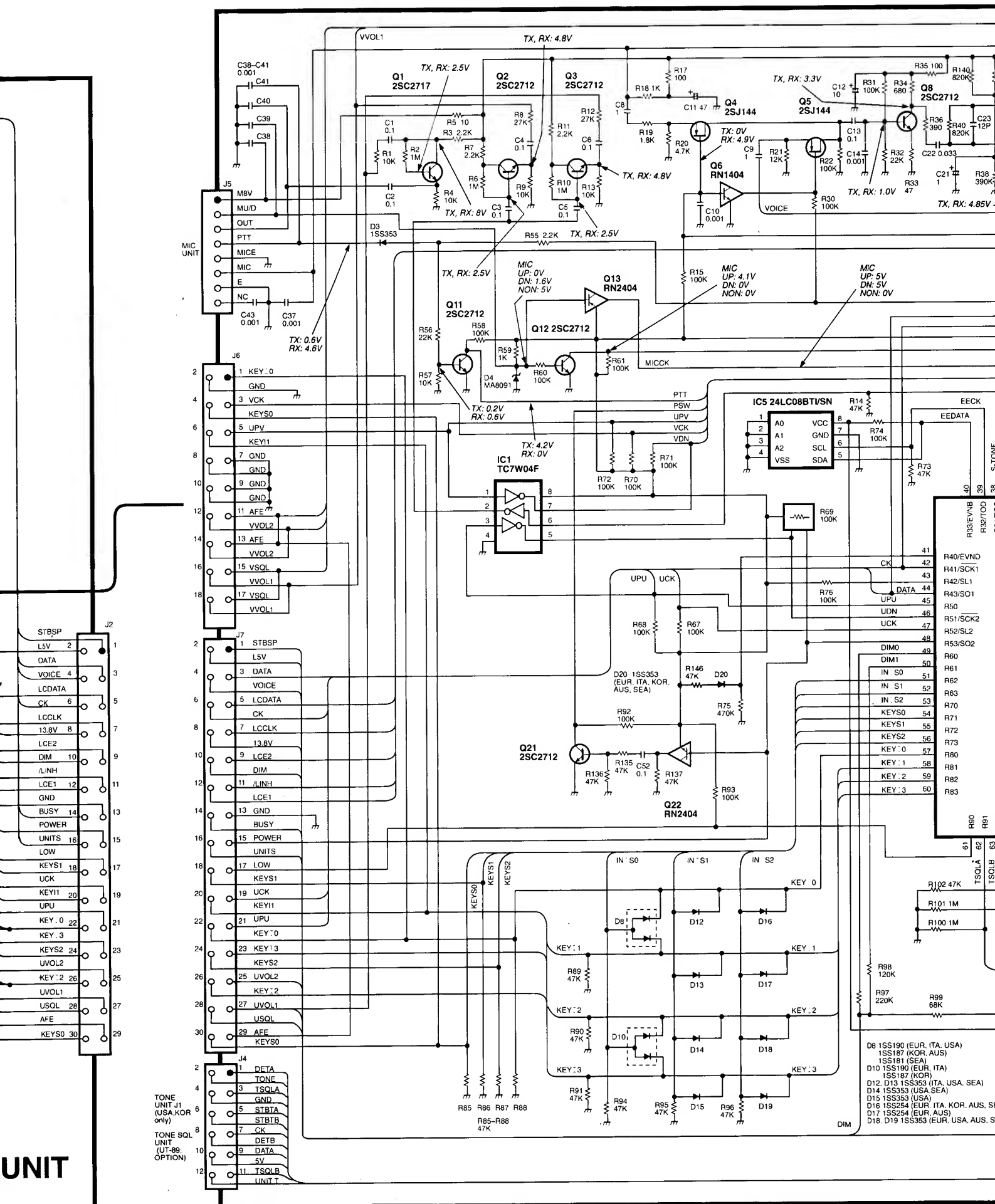
AGREE W/TONE : 0V  
DISAGREE W/TONE : 4.5 V





TONE  
 UNIT J1  
 (USA K)  
 only  
 TONE S  
 UNIT  
 (UT-89  
 OPTION)

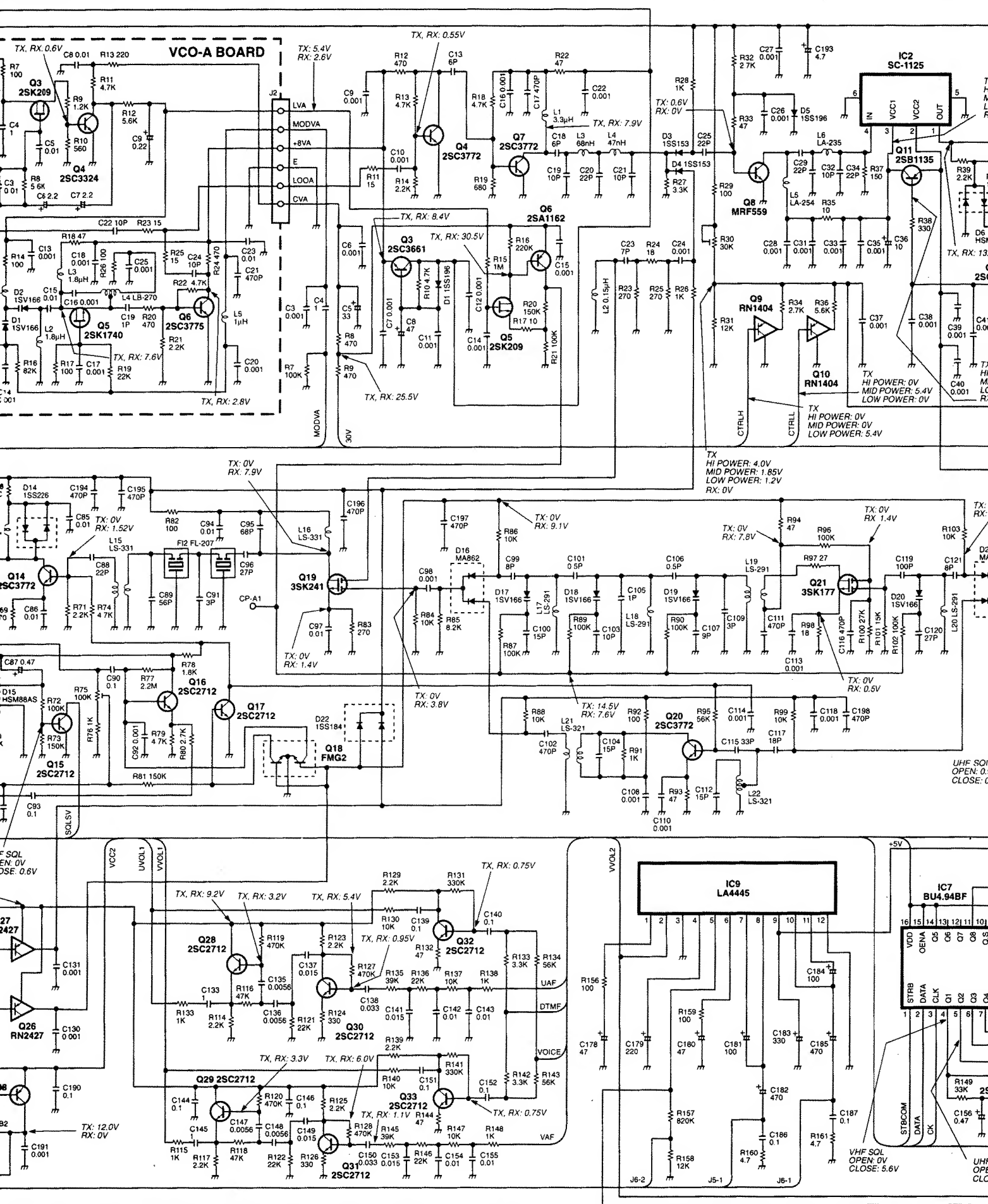


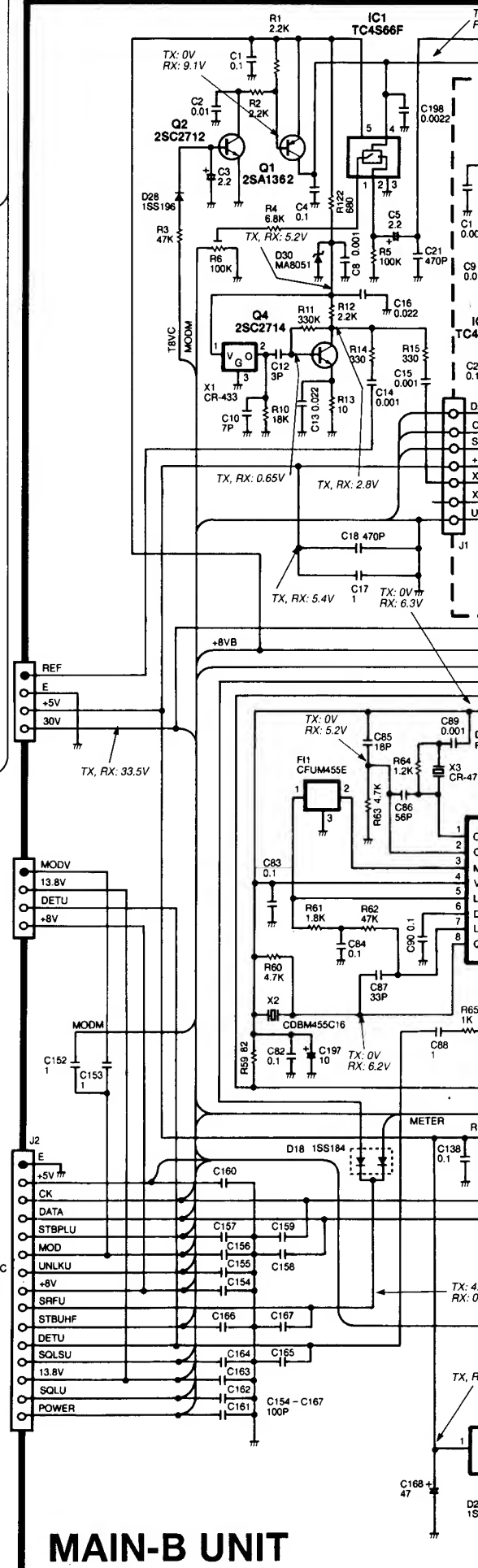
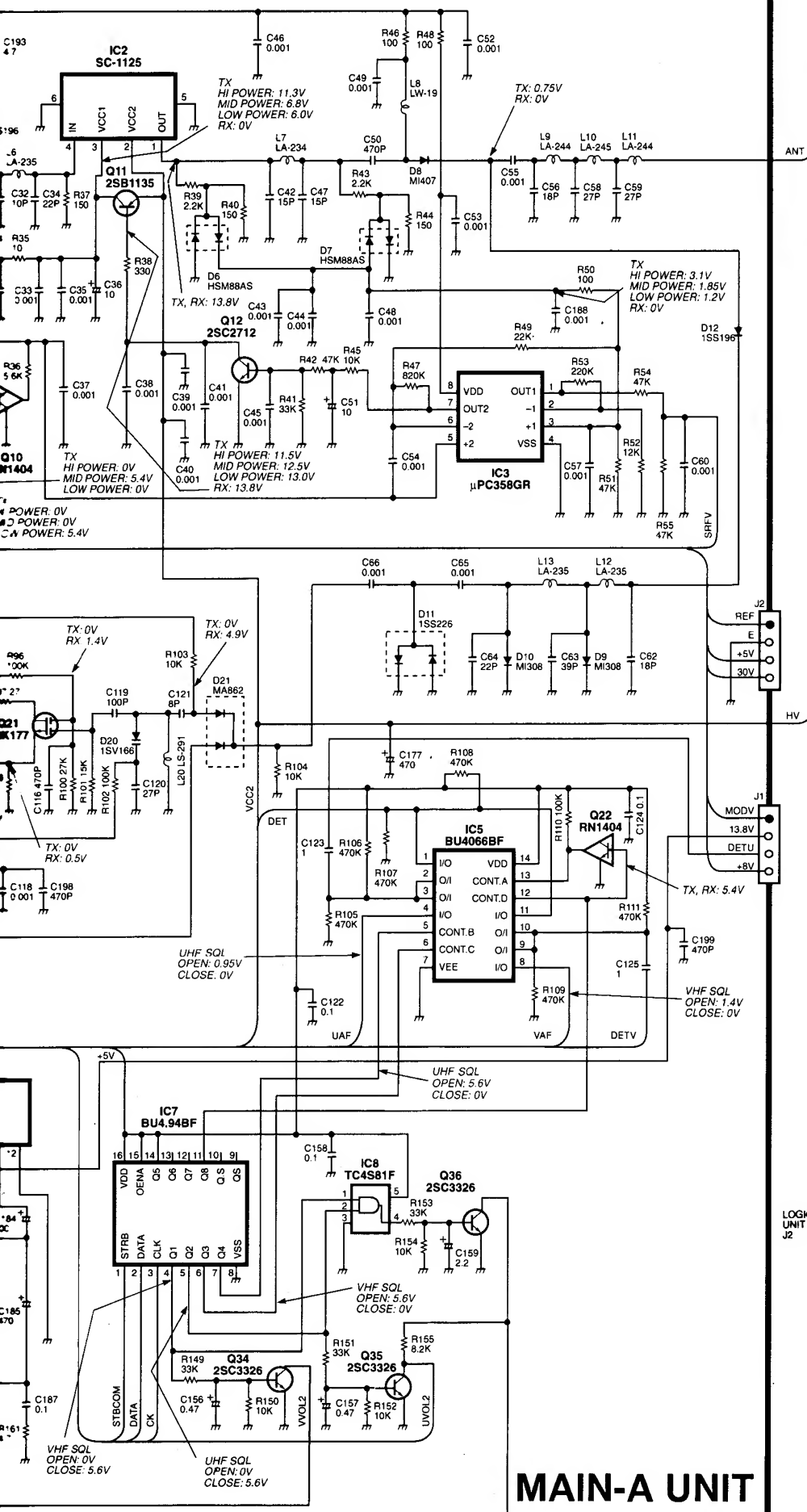




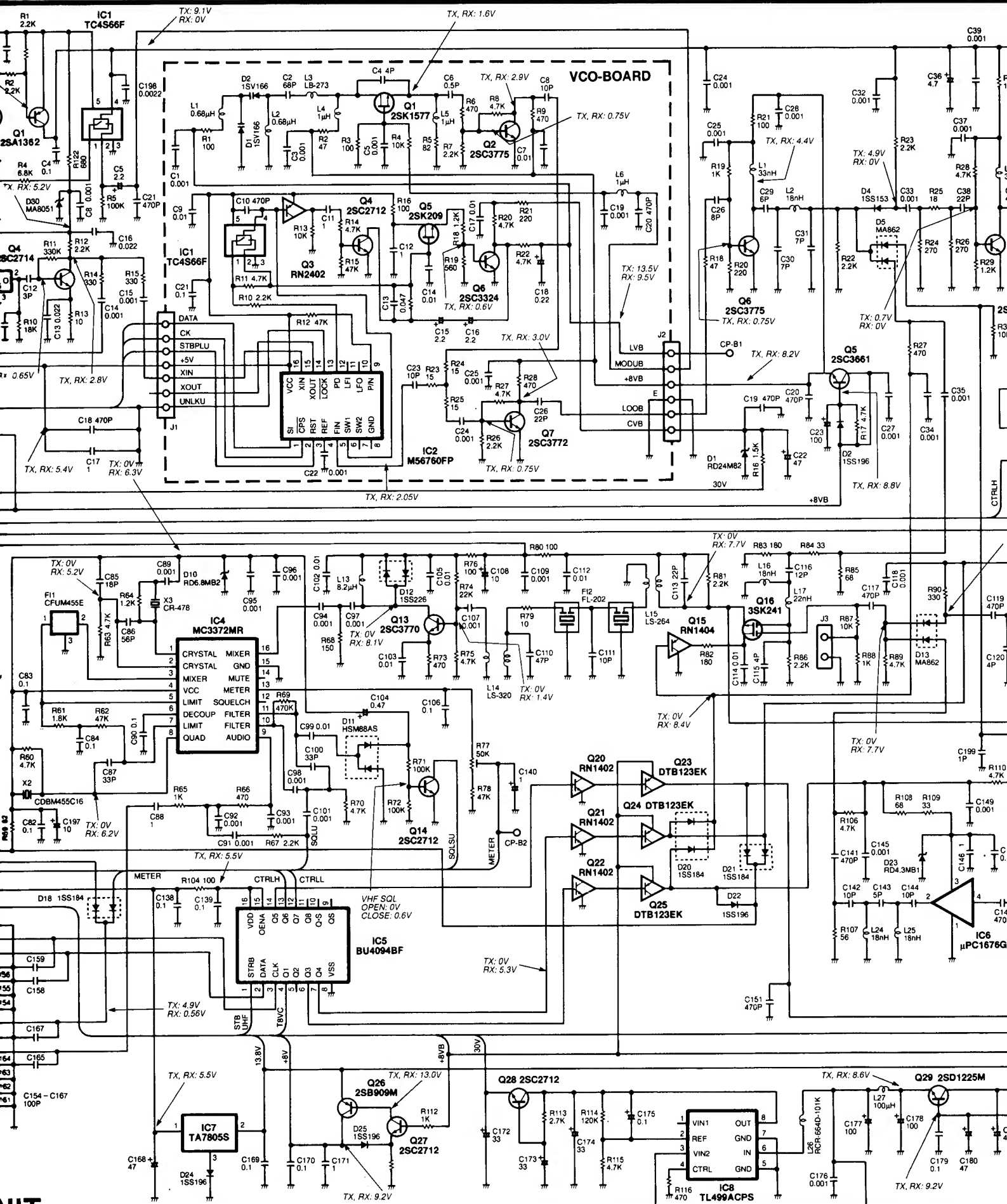


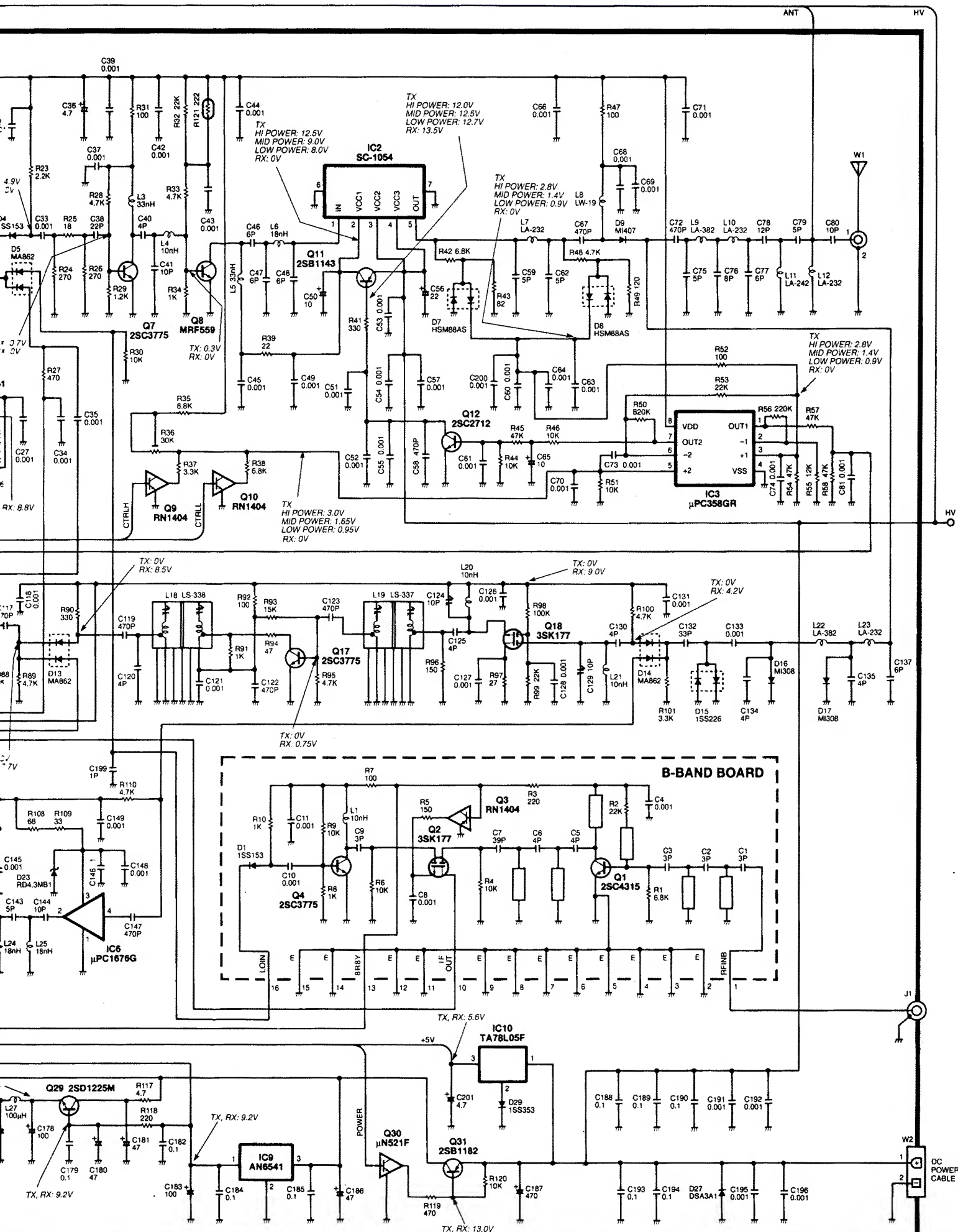












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